Value is in the Eye of the Beholder

At the end of the day, the owners (executives, stakeholders, investment firms, board of directors, etc.) have needs, as defined by their business objectives and strategies. The organization is orchestrated to meet and exceed those needs through an alignment of resources (people, process, procedures). While the business objectives are typically defined as financial metrics (e.g. Return on Net Assets, Stock Price, Free Cash Flow, Revenue Growth, etc.), a significantly growing focus is on the intangibles such as “preparedness for the future”, intellectual property, compliance, risk and uncertainty, much of it driven by economic, political, social, atmospheric, and other influencers. Additionally, future trends are significantly changing the measurements as we move from physical to digital products, services, and experiences.

Value DynamiX LLC focuses on Return on Value (ROV) - Holistic view on value creation through investments and organizational change management. ROV captures not only efficiency and effectiveness improvements, but also the value of risk avoidance and mitigation, AND value potential in the face of uncertainty. Services include:

Value DynamiX provides Consulting, Training, and Management/Analytical experience in Supply Chain, Operations, eSales, Product Lifecycle Management, Lean Principles, Performance Management, BI/Analytics, Activity Based Management, Revenue Management, and Cloud deployments (Software as a Service). Significant focus on alignment of business goals with process change and cloud deployments, and establishment of the business case (Return On Value, ROI, Value Assessment) for the respective changes. Interactive Training Platform (ITP) deployment for training gamification.

The following are primarily views of Value DynamiX, based on research, experience, and opinion – with a premise that we need to break the old paradigms in our understanding of value – especially as we evolve into a digital, green economy. Think out of the box, upstream and downstream from a particular focus – and realize that future changes have an impact – both negatively and positively. In other words – a better buggy whip doesn’t likely provide value to most of us!

The resources that are a foundation of Value DynamiX include:

- Value-pedia
- White Papers

Value-pedia Overview

Introduction to Value-pedia

Whether you are an Account Executive that is engaged with a prospect or customer; a Marketing Associate developing sales/marketing documents; a Product Engineer determining how to provide advantage in our products; a Services Consultant, Business/Solutions Consultant or Pre-Sales Consultant engaged in Discoveries, Value Assessments, or Implementations for customers – eventually all COMPANY personnel will need to translate a technological solution or business process change into the Value to the stakeholders.

Value-pedia should be viewed as a resource for anyone involved in discussions that are intended to focus on "how does the business application or process change impact the respective stakeholder?". This is an open forum where people can contribute ideas, suggestion, or complete facts or factoids* on topics that are relevant to Value. As such, this continuously evolving forum may be re-organized over time. Initially, the following categories (folders) are used, with many of the facts and factoids linked to multiple folders:

- Value Perspective - Various stakeholders' perspectives on what Value means
- Value Basics & Misc. - Facts or Factoids on assessment of value, and other topics
- Alignment to Business Objectives - Series on Alignment of COMPANY Solutions to Business Objectives
- Business Functional View - Facts or Factoids on various aspects of Product, Demand, Supply, Operations
- Green Clouds - Topics on Sustainability, Cloud Technology, Future Trends

Value-pedia will complement other resources, tools, and processes such as Customer Engagement (including Discovery, Value Assessments), and the continuous improvement process (capture baseline and measure progress/audit). Ideally, this will be accessed by other business functions within COMPANY as well.

So What? *– Value-pedia is a resource to elevate the conversation to the stakeholder level – whether it is Earnings per Share, Return On Investment, Carbon Emissions per Item, or even intangibles such as Value of Intellectual Capital. It's less about "feature and function" or "bits and bytes", and more about Value!!*

* factoid - "...becomes a fact when it appears in print", or "looks like a fact, smells like a fact, could be a fact, but isn't necessarily a fact", or (from Compact Oxford English Dictionary) "an item of unreliable information that is repeated so often that it becomes accepted as fact". We are interested in factoids in this forum, especially if they are leading-edge opinions - waiting to be proven!

Value Perspective - Various stakeholders' perspectives on what Value means

Value – What Is It?

A company serves many masters, or stakeholders, who must be satisfied based on their respective requirements for participating with that company. Ultimately, Value is the degree at which those stakeholders are satisfied – and is not necessarily the same metrics or even conclusions. Specifically,

- Owners are looking for a good return on their investment, and possibly an enduring investment stream as measured ultimately by market value
- Executives are looking for whatever drives their compensation, and accomplishes the business objectives as measured by the P&L, Balance Sheet, Balanced Scorecard, and other metrics
- Customers are looking for meeting and exceeding their requirements in products and services that enable them to meet their own business or personal objectives
- Employees are looking for whatever provides them with desired employment (i.e. fulfillment, career progression, happiness, etc.) and compensation
- Suppliers are looking for whatever drives consistent, profitable business to them
- Communities are looking for tax revenue, as well as positive environmental and resource impact
- Society is looking for a sustainable contribution by everyone, and is impacted by the negative and positive externalities.

We will explore the varied topics that relate to Value through an evolving entry of "factoids" called Value-Pedia. The intention is to provide a mix of leading edge concepts, changing dynamics, as well as probable mechanics to evaluate a company's success in meeting the challenges. Due to the constant evolution of technology and business models, it is reasonable to expect that these factoids will be sensitive to timing – and could morph or be obsolete down the road.

So What? *A company will engage in commerce in order to meet the needs of the many stakeholders. A "widget" manufacturer isn't in business only to make the best widget - it is in business to ensure that the commerce of widgets brings Value to everyone involved. And Value is in the eye of the beholder!*

Value To COMPANY Customers – Not Just Efficiency (Part 1)

Over the years, as I've developed the techniques for Value Assessments, I classified the benefits as **efficiency** (reduced time, number of steps, waste within the respective process), and **effectiveness** (benefit leverage upstream and/or downstream from the respective process). Examples included:

- Cellular manufacturing – Efficiency (faster cycle time, less direct labor); Effectiveness (lower inventory, improved on-time delivery, improved customer service)
- e-Sales BOM generation – Efficiency (faster BOM creation); Effectiveness (improved accuracy, reduced rework, reduced inventory, reduced field returns)
- Demand management/S&OP – Efficiency (reduced forecasting effort, reduced inventory planning effort); Effectiveness (reduced inventory, improved capacity utilization, increased profitability)

Expect that the <u>Effectiveness will be worth 5 to 10 times</u> the business benefits of the Efficiency!! While you may reduce a few FTE's (full time equivalent people) due to the improved productivity (efficiency of a process) - you potentially can Avoid Lost Orders/Customers, Eliminate Penalties, Reduce Scrap/Rework, Reduce Inventory....and even capture New Business!!

So What? *When implementing a technology or a specific business process - look beyond the respective process to the impact upstream and downstream*

Value To COMPANY Customers – Not Just Efficiency (Part 2)

Test your knowledge by identifying the benefits of the following:

1. Improved planning process, resulting in reduced time required to plan production
2. Improved planning process, resulting in more effective use of capacity
3. Improved planning process, resulting in improved inventory management (right part, right place)
4. Improved visibility to Gross Margin on product mix, resulting in “upselling”
5. Improved consolidation of freight, carrier shopping, and premium freight reduction
6. Faster collections on invoices (reduced “receivables”)
7. Shortened lead times in production
8. Improved visibility of requirements for suppliers, enabling them to improve their planning process
9. Customer Service improvement from 92 to 95%
10. Increased system uptime from 90 to 99%. Is it IT efficiency – or what is the value of shipping more orders, making more parts, catching errors….?
11. Compliance resulting in reduced risk of shipping to denied parties

Did you think through the external (downstream, upstream) impact, as well as the internal process? See Part 3 for examples of benefits

So What? *Don’t just think of the obvious, or easiest to calculate. Think “Out of the Box!”*

Value To COMPANY Customers – Not Just Efficiency (Part 3)

So did you identify benefits similar to the following?:

1. Improved planning process, resulting in reduced time required to plan production – fewer ftes = ftes*compensation
2. Improved planning process, resulting in more effective use of capacity – less overtime, avoidance of buying new capacity, avoidance of outsourcing
3. Improved planning process, resulting in improved inventory management (right part, right place) – lower inventory $ (one time), lower inventory carrying costs (annual)
4. Improved visibility to Gross Margin on product mix, resulting in “upselling” – Increased revenue and/or margin
5. Improved consolidation of freight, carrier shopping, and premium freight reduction – Lower freight, premium freight through consolidation, mode/carrier shopping
6. Faster collections on invoices (reduced “receivables”) – time value of money, reduced uncollectables
7. Shortened lead times in production – increased competitiveness, reduced costs throughout, reduced inventory, increased fixed asset utilization
8. Improved visibility of requirements for suppliers, enabling them to improve their planning process – leverage to negotiate reduced pricing from suppliers
9. Customer Service improvement from 92 to 95% - First – what does this mean? If improved On Time Delivery, Customer Satisfaction – then increased sales PLUS the underlying benefits that improve the performance (reduced waste, better planning/scheduling, reduced lot sizes, ….), PLUS potential avoidance of penalties (deductions)
10. Increased system uptime from 90 to 99% - Lower IT attention (possibly), but more importantly, increased user access – which results in the business benefits of their respective function (e.g. If a planner has access – perhaps improved inventory, reduced downtime….)
11. Compliance resulting in reduced risk of shipping to denied parties – productivity in compliance checking, avoidance of penalties, lost sales

So What? *Every business process, task, entity, and resource may be affected by an improvement. Similar to the Butterfly Effect – If a Customer Service rep. flaps his/her wings, the Shipping Clerk will ship a tornado…. OK, not exactly a good analogy!*

Value Perspective - Owner

For a publicly traded company, Shareholder Value (SV) is the part of its capitalization that is equity as opposed to long-term debt. In the case of only one type of stock, this would roughly be the number of outstanding shares times current shareprice. Things like dividends augment shareholder value while issuing of shares (stock options) lower it. This Shareholder value added should be compared to average/required increase in value, aka cost of capital. Shareholder value is a business buzz term, which implies that the ultimate measure of a company's success is to enrich shareholders.

For a privately held company, the value of the firm after debt must be estimated using one of several valuation methods, s.a. discounted cash flow or others.

The term SV is used in several ways:

- To refer to the market capitalization of a company (rarely used)
- To refer to the concept that the primary goal for a company is to increase the wealth of its shareholders (owners) by paying dividends and/or causing the stock price to increase
- To refer to the more specific concept that planned actions by management and the returns to shareholders should outperform certain bench-marks such as the cost of capital concept. In essence, the idea that shareholders' money should be used to earn a higher return than they could earn themselves by investing in other assets having the same amount of risk. The term in this sense was introduced by Alfred Rappaport in 1986.

Maximizing shareholder value, also known under value based management, states that management should first and foremost consider the interests of shareholders in its business decisions. Although this is built into the legal premise of a publicly traded company, this concept is usually highlighted in opposition to alleged examples of CEO's and other management actions which enrich themselves at the expense of shareholders. Examples of this include acquisitions which are dilutive to shareholders, that is, they may cause the combined company to have twice the profits for example but these might have to be split amongst three times the shareholders.

As shareholder value is difficult to influence directly by any manager, it is usually broken down in components, so called value drivers. A widely used model comprises 7 drivers of shareholder value, giving some guidance to managers:

1. Revenue
2. Operating Margin
3. Cash Tax Rate
4. Incremental Capital Expenditure
5. Investment in Working Capital
6. Cost of Capital
7. Competitive Advantage Period

Based on these 7 components, all functions of a business plan and show how they influence shareholder value. Looking at some of these elements also makes it clear that short term profit maximization doesn't necessarily increase shareholder value. Most notably, the competitive advantage period takes care of this: if a business sells sub-standard products to reduce cost and make a quick profit, it damages its reputation and therefore destroys competitive advantage in the future. The same holds true for businesses that neglect research or investment in motivated and well-trained employees. Shareholders, analysts and the media will usually find out about these issues and therefore reduce the price they are prepared to pay for shares of this business. This more detailed concept therefore gets rid of some of the issues (though not all of them) indicated by critiques.

The sole concentration on shareholder value has been widely criticized, particularly after the financial meltdown of 2009. While a focus on shareholder value can benefit the owners of a corporation financially, it does not provide a clear measure of social issues like employment, environmental issues, or ethical business practices. A management decision can maximize shareholder value while lowering the welfare of third parties.

It can also disadvantage other stakeholders such as customers. For example, a company may, in the interests of enhancing shareholder value, cease to provide support for old, or even relatively new, products. Additionally, short term focus on shareholder value can be detrimental to long term shareholder value; the expense of gimmicks that briefly boost a stocks value can have negative impacts on its long term value.

An alternative definition based upon this criticism is Stakeholder Value - The intrinsic or extrinsic worth of a business measured by a combination of financial success, usefulness to society, and satisfaction of employees, the priorities determined by the makeup of the individuals and entities that together own the shares and direct the company.

However, this concept is difficult to implement in practice because of the difficulty of determining equivalent measures for usefulness to society and satisfaction of employees. To give an example: how much additional "usefulness to society" should shareholders expect if they were to give up $100 million in shareholder return? In response to this criticism, defenders of the shareholder value concept argue that employee satisfaction and usefulness to society will ultimately translate into shareholder value.

So What? *Although Shareholder Value had prominence during the 20th Century, it is reasonable to expect a shift towards Stakeholder Value or some other measure that captures longer term interests of other parties (in addition to the shareholders). The single motivation of increasing the stock price may meet the needs of the owner (public company), but be detrimental to others that have a stake! What good is growing the stock price in the short term, when I'm growing the carbon emissions in the long term?*

Value Perspective - Executive

While the Shareholders finance the company, and the Board of Directors have decision-making authority, voting authority, and specific responsibilities separate and distinct from the authority and responsibilities of owners, the Executives "execute" the business strategies and plan. As such, the executives are looking for whatever drives their compensation, and accomplishes the business objectives as measured by the P&L, Balance Sheet, Balanced Scorecard, and other metrics.

We've discussed in other factoids some of the business objectives that are fundamentals. In the *Alignment to Business Objectives* series, the entire organization is orchestrated to drive towards metrics that are directly related to the P&L and Balance Sheet (e.g. Increase Operating Income Margin, Reduced Days of Supply). It is very common that, not only will the Executive be evaluated based on achievement of those objectives, but they will also be compensated accordingly. An example, in addition to the business objectives identified, are measures such as:

- Economic Value Added (EVA) - measured as Net Operating Profit After Taxes (or NOPAT) less the money cost of capital, and is a good measure of remaining cash after a company finances its operations (all capital – debt and equity). The EVA is a registered trademark by its developer, Stern Stewart & Co. Many time EVA is a measure that is cascaded through the organization in terms of a bonus to each employee (or by group).
- Earnings Before Interest, Taxes, Depreciation, Amortization (EBITDA) – an approximation of cash flow from the operations, and is especially of interest for large companies with significant assets, and/or for companies with a significant amount of debt financing. It is rarely a useful measure for evaluating a small company with no significant loans.

Most measures, today, may motivate actions that maximize the measures for the short term, at the sacrifice of longer term. However, the trends are changing to include recognition of impact to society and environment (sustainability). Also, while the tangible assets have been easy to measure and significant, trends towards the intangibles (digital, intellectual capital) will require new methods of consideration.

S*o What?* *The Executives lead the day to day activities that generate commerce for the business. Although the Shareholders and Board of Directors are providing expectations and guidance, the Executives are paid to "execute". And, they speak in a language that ultimately must be translated to the actions of the organization. Not "bits and bytes" or "feature/function", but EVA, EBITDA, and a bunch of other acronyms!*

Value Perspective - Customers

Customers determine the Value based on how well the company's products and services enable them (customer) to meet their own business or personal objectives. A company will compete for the customer's business through collaborative design, marketing, and sales. While the 20th century was generally "supplier driven" where a company could produce products and then sell them, the 21st century is evolving to a much more customer-driven focus. Refer to the factoid Cloud *Driven Value*.

Ultimately, the Customer Retention measure reflects whether the customer perceives value in terms of Price, On Time Performance, and Quality (form, fit, function), etc. The underlying factors that a company must endure such as material costs, labor costs, expediting costs, premium freight, working capital, fixed assets, etc. are only of interest to the customer in so much that it determines the "stability and future" of their “supplier”. The customer primarily cares whether you meet their needs, but also wants reassurance that you’ll stay in business as their partner.

So *What?* *The customer’s view of value is based on the price they’ll pay – and whether they’ll stay your customer!*

Value Perspective - Employees

The employees’ perspective of value may be whatever provides them with desired employment (i.e. fulfillment, career progression, happiness, etc.) and compensation. Although they may strive to do their best in whatever task assigned, and/or work as a team player to help the organization meet its objectives, ultimately the employees’ decisions to continue with a company are based on how well the company is meeting their needs.

Those needs will vary, depending on the employee’s stage in life. As Maslow said (in Maslow’s Hierarchy of Needs), a person could be climbing the ladder of life – from physiological (food, shelter) to self-actualization.

So *What?* *An employee may find their company a “cool” place to work; or they may have “fallen” into a job based on what was available; or they may have aggressively sought out a particular company to fulfill their career aspirations; etc.   However, while they may strive to produce the most competitive product, or meet their own metrics at a performance review, they really are motivated by their needs in life.*

Value Perspective - Suppliers

Suppliers will value their relationship with the company (their customer), based on ability to capture on-going business at a profitable price, and in a partnership manner. On-going provides an ability for them to plan their strategies and tactics, including capacities, processes, personnel, and the subsequent supply chain. Profitable price enables them to meet their objectives relative to revenue, cost, and capital. And, partnership manner suggests a collaborative approach in the way that orders are processed and monitored, as well as how products and services are developed.

So *What?* *The value that a company provides to the suppliers is enhanced through a partnership that provides profitability and sustained potential. The effort (and cost) to develop new customers is 4X or more than it takes to keep a customer.*

Value Perspective - Communities, Societies

The value that a company gives to communities, and society as a whole, is related to financial impact, as well as negative and positive externalities such as the environmental impact. Communities are looking for tax revenue, and for employment of its citizens, but not to the detriment of health, welfare, and environment. Society, as well, depends on the ability for commerce to drive its economic engine.

From an environmental standpoint, the communities and society are increasingly dependent on a sustainable approach where finite resources are conserved with reduced waste and carbon emissions as an output. This is requiring innovation in products and processes to ensure efficient use of raw materials, trends towards renewable energy, and contained or reduced waste in the form of scrap, exhaust, pollution, etc.

So What? *While the 20th century proceeded with a pretentious attitude that resources were inexhaustible – or in no need of consideration, companies must now make trade-offs in their approach to material transformation. They can no longer disregard their impact on the environment. It isn't "business as usual"!*

Value Basics & Misc. - Facts or Factoids on assessment of value, and other topics

Rethinking Metrics (Part 1) - Why traditional metrics are misleading

Companies establish business objectives and goals, as mentioned in *Alignment of Business Objectives to Actions*, in order to align the people (employees, customers, suppliers), materials, and infrastructure. The business goals are rooted in optimizing measures of revenue, cost, and capital, and are further cascaded through the organization in the form of performance metrics.

Metrics are typically ratios rather than single factors, which negate other variables, and provides a more normalized view of performance. For example, rather than measure inventory $, which will vary due to business levels as well as "good inventory management", a company will use inventory turns (12 mo. Cost of Goods/average inventory during the 12 months) – which accommodates the business level fluctuations.

However, traditional metrics may be losing their effectiveness – especially as companies rethink their strategies in light of:

- Business model morphing – level of vertical integration vs. outsourcing based on distinctive competencies
- Technology – level of automation, re-design, and virtualization
- Demand-driven, customer-centric – different expectations vs. supply-driven economies
- Sustainability – valuing the productivity of natural resources (vs. labor, processes)

Each one of these topics will be explored in subsequent factoids, and will establish how we will want to modify some of the metrics to motivate the desired behavior as the company strives for competitive advantage.

So What? *Sales per employee takes on a different meaning as companies outsource; Return on Assets changes as companies outsource and/or provide more services vs. physical products. Measures can be misleading - or at least need to be re-positioned* *subject to the role of their numerator and/or denominator (ratio metrics) in the new business climate. Changing Metrics - of course!!*

Rethinking Metrics (Part 2) – Business Model Morphing

Companies are morphing based on their distinctive competencies and profit objectives (insourcing, outsourcing, increased value-add, impact of politics, economic conditions, intellectual property, infrastructure on sourcing locations, stakeholder needs, sustainability issues):

- The **consumer** is skipping steps, by-passing the retailer and distributor - buying direct from the manufacturer on-line
- The **retailer** is providing on-line services to offer alternatives to in-store sales, while using direct ship from the manufacturer, thus by-passing the distribution
- The **distributor** is competing with 3rd party logistics companies, with on-line shopping, or with direct ship – squeezing further their already slim net profits. Conversely, they are adding value through assembly and/or service, thus overlapping with their suppliers/manufacturers
- The **manufacturer** is morphing through various 'vertical integration' decisions and sourcing decisions, as well as serving multiple channels (on-line, direct ship, distribution, direct store delivery….) necessitating the need to fully understand end-user requirements.
- The **supplier** is considering higher value-add products and services to differentiate and provide higher margins, thus competing with the manufacturers (and the respective supply, demand considerations) and/or competing globally with commodities.

Even within the same industry, the relative level of people, inventory, and fixed assets to support sales, customer service, etc. may vary widely due to this reshaping of the supply chain.   One company could be very vertically integrated, thus carrying considerable inventory at the successive stages, while another company could be "assembly only" with minimal inventory.

Conversely, dissimilar companies may be compared when one has a Best-In-Class process that could be applicable to the dissimilar company. For example:

- A company may want to compare its Transportation to Federal Express
- A company may want to compare its Supply Chain to JCI
- A company may want to compare its web-sales channel to Amazon.com

So What? *Sales per employee is directly impacted as a company reduces the people through outsourcing, change of value-add, price increases; Inventory Turns rises dramatically as a company outsources the lower level Raw Materials and WIP transformation; Return on Assets increases as the company removes its transformation process equipment. These metrics must be recalibrated when the company morphs.*

Rethinking Metrics (Part 3) – Technology

Technology is changing how customers access products, changing the nature of the products (more service, value-add, digital), and changing the supply chain and transformation, for example:

- From driving to retail stores…to shopping on-line
- From CDs to… MP3s
- From internal combustion, mechanical to… hybrid electrical
- From driving the industrial machine by oil to… driving by renewables such as solar, wind, landfill methane
- From congregating at an office to… telecommuting
- From buying a pump, to… buying volume and pressure controlled liquid transfer
- From buying perpetual license and maintenance to… Software as a Service, Cloud, Cloud
- From buying a "buggy whip"...to...well....???

So What? *Metrics that are used to motivate correct behavior will need to properly align to the business transactions and infrastructure that evolves with technological changes. One- time sales evolves to annuities; inventory evolves to intellectual property and knowledge management; capital investments evolve to periodic expenses; tangible assets such as equipment evolve to intangibles such as processes, employee knowledge; productivity of people and equipment evolves to productivity of natural resources. Think of the impact on Transportation costs/Revenue – when you are merely shipping "electrons"!*

Rethinking Metrics (Part 4) – Demand-driven, Customer-centric

The customer is "king", as mentioned in Demand Driven Value factoid. A plethora of alternative sources and methods (channels) to acquire enables them to demand "I want – what I want – when I want it"! In fact, the customer is skipping steps in the supply chain (e.g. buying direct from the factory). And, there is an expectation of immediate gratification, perfect reliability, and customization to specific needs. Add to this, the technological and business model changes that are transforming what the customer buys from a physical product to a digital product and/or service.

The resultant proliferation of SKUs, increased supply chain paths, reduced lead time, and expectations for perfection are being met by lean practices, integration, technological advances, outsourcing, training, design for manufacturability and for environment, and a host of other attempts to ensure competitiveness and profitability.

So What? Metrics that attempt to capture the effectiveness and efficiency of the sales process will have "order of magnitude" changes. For example, where the former methods included a sales person calling on the customer, taking an order in person, tracking and expediting the order – the customer now may shop and order *directly on-line, and track their own order. The salesperson productivity measures, the total cost of sales, the Sales/salesperson, the Sales/total employees, etc. will change dramatically. Similarly, the proliferation of SKUs will have an impact on most of the downstream metrics – although most companies are striving to negate the impact of this complexity through flexibility and agility.*

Rethinking Metrics (Part 5) – Sustainability

There is an increasing awareness (or opinion) that a company's duty is drive its business model, not only to meet financial expectations of the stakeholders, but to also enrich the community and to minimize its carbon footprint (increase productivity of the natural resources) in order to ensure sustainability for future generations. The industrial revolution enhanced the standard of living by increasing productivity of people and by condensing the population (urban movement), with the assumption that natural resources were almost infinite. Today, however, we know that "people" are plentiful, but the natural resources are exhaustible – at least the non-renewables. Companies are now striving for competitive advantage through the merits of sustainability – lower waste, improved branding, and stewardship of future resources. In many cases, their customers are demanding it.

Sustainability is also motivating a rethinking of the metrics to motivate behavior. Productivity of natural resources such as oil, water, other raw materials, as well as output measures of emissions, landfill volume are factors of these metrics. And companies are not just concerned about the activities within their four walls, thus are looking up and down the supply chain for similar motivation. For example, what is the carbon footprint of their <u>supplier</u> of servers – as well as the servers themselves?

So What? *Companies are only now developing proper metrics that reflect performance in a sustainable model. Productivity of labor and assets is still important, but so is the productivity of water. Output per person is still important, but so is emissions/person. Ultimately, the metrics will be in the form of (Value of product or service)/(unit of natural resource employed). Guess there's a new meaning to Green Stamps!*

Cost Of Complexity

Businesses must compete in a world of function-rich products with shorter life cycles and customer service expectations approaching perfection. Competitors gain leverage through web-enabled international marketing, sourcing, and distribution. Customers can shop instantaneously. Now the paradox - all of this complexity, yet the market prices are generally being driven down! The cost of complexity threatens our margins. So - should we accommodate - or eliminate?

The drivers of complexity are obvious:

- Demand driven economy spawns product SKU proliferation (configuration, packaging, etc.)

- Product design drives >75% of the cost (determines specifications, materials, manufacturability, supply, number of SKUs, etc)
- Supply chain design drives >50% of the delivery costs (location, mode, distance) as well as inventory, lead times, and level of service

The results of complexity are significant:

- Up to 70% of the overhead budget (procurement, materials, production, shipping)
- Up to 40% of the inventory (safety stock, # of locations)
- >50% of the lead time (scheduling conflicts, change-over, re-work, returns)
- Additional impact on Customer Service, Distribution, Field Service, IT....

How to eliminate? - Standardization (sell 100 of 1 SKU VS. 1 of 100 SKUs, Design out complexity)

How to accommodate? - Flexible processes, Postponement (generic until last operation), Personnel development, Outsource

So What? *- No easy answer on complexity. Thhe fact is the customers are driving increased complexity. If elimination of complexity is not an option, then you must accommodate it. But, at least, recognize that it is driving up the costs!!*

Understanding the Cost Lever Effect

As mentioned in *Design Drives >75% of Product Costs*, it is essential to understand that, while product costs are reflected in Cost Of Goods Sold (e.g. materials, labor, burden), the drivers of cost are upstream from where that money is spent. Similarly, when analyzing any business process, you should look upstream to leverage the greatest impact. You need to recognize the “cost lever” effect.

A good example is, conversely, how expensive it would be to make a product design change at various stages in its lifecycle. A design change while the product is still in Engineering would cost $X (engineer’s time). That same change once a product’s BOM is released to production would cost $10X (tooling and system impact). Once the product is in full production and tooled, it would cost $100X (inventory, retooling, capacity, system impact). And, if the product is installed at the customer, it would be $1000X (customer downtime, re-implementation).

So What? *– There is a significant difference between fixing the symptoms vs. fixing the source. Once you identify the cost drivers upstream you can leverage your way to profitability.*

Cash To Cash

Cash To Cash (Cash Cycle, etc.) is a popular metric, and should be easily captured. Most companies have, or are interested in that metric. It isn't necessarily measuring profit results, but does impact the bottom line considering the time-value of money and inventory carrying costs. Also, there may be additional bottom line impact if you consider the terms, such as getting discounts for faster payment (Accounts Payables), and giving discounts for faster payment (Accounts Receivables). Therefore, the value of capturing and measuring Cash To Cash is:

1. Inventory Carrying Costs
2. Interest on debt
3. Discounting for early payment (to the suppliers)
4. Discounting for early payment (by the customers)

Some of the value would be achieved even if a company did the measurement with a spreadsheet. However, it would miss the timeliness, the thoroughness, the granularity, and actionable drill-down to specific underperforming elements. Manual spreadsheets would not provide immediate feedback to the business functions that can take action (e.g. AR, Inventory Management..) Also, the scope and breadth across an organization - with the interactions, synergy, cross-referencing, etc. - would be missed with individual (by site, plant) spreadsheets. The advantage of using Salient would be the above value as you improve Cash To Cash, plus the advantages of speed, granularity, scope, thoroughness, proactive insights on trends, and many more!

Cash To Cash expresses the length of time, in days, that it takes for a company to convert resource inputs into cash flows. The cash conversion cycle attempts to measure the amount of time each net input dollar is tied up in the production and sales process before it is converted into cash through sales to customers. This metric looks at the amount of time needed to sell inventory, the amount of time needed to collect receivables and the length of time the company is afforded to pay its bills without incurring penalties. (definition from Investopedia)

The fact that a BI solution could calculate the impact at a granular level thus enables the company to take action on any under-performing element (e.g. customer, SKU, supplier....). The calculation would be Days Sales Outstanding (DSO) + Days of Supply (DOS) - Days Payables Outstanding (DPO):

- DSO = Accounts Receivables/(Sales/365), and this could be current AR or average over time, and the 365 could be adjusted to # business days
- DOS = Inventory/(COGS/365), and this could be current Inventory or average over time, and the 365 could be adjusted to # business days. It is possible, for some industries, that they may prefer to use Sales rather than COGS.
- DPO = Accounts Payables/(COGS/365), and this could bee current AP or average over times, and the 365 could be adjusted to # business days. I'm not sure I've ever seen where a company uses Sales rather than COGS.

Caution! - While a larger DPO will help the overall Cash To Cash calculation - it somewhat defies logic. All you would be doing is delaying payment to the suppliers, which penalizes them and would be probably reflected in future pricing!!

So What? *– Cash To Cash is not just an efficiency of money measure, in which improvement impacts the time-value of money. Focusing on the speed of payments* *can also help suppliers, the company, and customers achieve lower costs. With all else equal, why not!?*

Customer Market Value- declining impact of Tangible Assets

As companies' products evolve from physical to more digital and service, and as they outsource processes that are not directly within their distinctive competencies, their Market Value is less related to Tangible Assets. In North America, the Tangible Assets/Market Value ratio has gone from 62% in 1982, to <10% in 2010 (per Robert Kaplan-Harvard). A possible comparison might be a company that produces physical products vs. a company that "produces" a service (that also enables considerable non-market transactions):

- **General Electric's (GE)** Market Value in 2008 was $139B, while revenue was $177B, tangible assets $700B
- **Google's** Market Value $125B, while revenue was $22B, tangible assets $30B
- Thus, similar Market Value, but Google was 1/8 the rev. and <5% tangible assets of GE
- In Google's case, the intangible assets were >$70B (goodwill, organization, brand…)

So What? – *Traditional metrics such as Return On Assets will lose their meaningfulness, while there is a need to recognize Intangibles such as Intellectual Property, Branding, People/Talent, Training, and Business Processes. We need to measure Return on Intangible Assets.*

Activity Based Costing Revisited

Manufacturing has evolved from highly manual, low capital processes, to a much more capital intensive, automated approach that requires significant support processes (e.g. manufacturing engineering, materials scheduling, operations planning, inventory planning, etc.). While product costing was fairly easy in the early 20th Century, with assignment of direct labor and direct materials costs, companies began to rethink their costing approach as overhead through integration, automation, and inventory became a larger percent of the expenditures. Formerly they were able to apply overhead as an allocated cost based on the proportion of direct labor consumed (standard burden allocated based on standard hours), but it became inappropriate and even misleading to use this method when the overhead became a significant portion of the product cost. In many cases the overhead was inversely related to direct labor (some of the most automated processes required significant support).

During the last two decades of the 20th Century companies developed new rules for allocating the overhead in order to properly affix the costs to the products that were actually driving the overhead. Rather than only using direct labor, the companies identified "activity drivers" such as square feet, units of capacity, % of a support person's time, etc. which were more fairly representative of how the overhead was being consumed (and driven). The products that required the most support in terms of engineering, operations support, material scheduling, etc. would properly be assessed more overhead. This would Not have happened if direct labor was the basis for allocation – as some of these products may have very little direct labor (especially as they are automated). Activity Based Costing (ABC) became the “campaign slogan” and new method for allocating overhead.

Two phenomena subsequently occurred. First, it was found that ABC could also be used to identify the cost drivers and, therefore, prioritize cost reduction initiatives. Not only was the product costing more accurate (it was not unusual to find that many high volume, standard products were over-costed by 30+%, while other more complex products were under-costed by more than 100%!), but there was a very good tool for driving process improvement.

Secondly, it was found that many of the financial systems were not adequate to capture the activity history. Setting up the activity drivers and new allocation rules was cumbersome, and many companies decided to use ABC as a one-off analysis tool – rather than institutionalize in their costing systems.

So What? *After all these years, ABC continues to be, at least, the right philosophy on how to properly cost products – even if it isn’t, by name, the system of choice. This will continue to be an interesting topic as: Overhead explodes, outsourcing morphs the business model, and products evolve to digital and services. How will we allocate intellectual property, branding, and company image to the product?*

CAPEX vs. OPEX – Which is preferred?

Companies enable commerce through the development of their infrastructure as a means to an end - the end being to generate profit and a return for their stakeholders. The infrastructure may be a combination of buildings, process equipment, people, and business processes, and can be internal to the company and/or external (e.g. 3rd party outsourcing, customers, suppliers). The decision on whether internal or external is based on a combination of factors, including:

- Distinctive Competencies
- Security, Intellectual Property
- Total Costs of Ownership (TCO)
- Capital availability (finite capital, budgeting/seasonality period)
- Company strategy
- Deployment ability
- Scalability
- Tax ramifications
- Technical issues (e.g. complexity, customization, Moore's law*)
- Volume flexibility, volatility
- Physical location
- ...any many other factors....

In a similar vein, but not necessarily synonymous, is the discussion of CAPEX (capital expenditure) vs. OPEX (operational expense). Traditionally, CAPEX implies making an upfront commitment to capital (owning and depreciating the capital over time), while OPEX represents the ongoing expense associated with transacting your business and generating profit and returns for the stakeholders. But, to be sure, CAPEX is not exactly the decision to maintain a process internally, or to insource, or to acquire capital equipment, or a decision to make an upfront investment (leasing equipment is a periodic payment, although you own the capital). Also, OPEX is not exactly the decision to outsource, nor lease internal equipment, nor "pay by the slice"...

So What? *It is important to NOT confuse method of financing with the strategic decision to insource or outsource. Case in point is the decision to go On Premise with software vs. Cloud. It is Not just a decision to avoid a capital expenditure, or to spread out the expense over time. We've discussed the benefits of Cloud vs On Premise, and the method of financing is only one aspect. CAPEX is not synonymous with On Premise, OPEX is not synonymous with Cloud.*

*Moore's law reflects the dramatic reduction in cost associated with computers, semiconductors where there is a doubling of capability every two years, and a proportional reduction in cost. The net effect on capitalization is that replacement costs may be lower than the depreciated book value at any given time (e.g. server square footage, energy consumption, and price has decreased >75% in the last four years). This impacts the analysis of whether a capital investment is worthwhile, or else you might choose to outsource the process rather than do it internally, while letting the third party suffer the capital value erosion.

Balanced Scorecard – Measuring Intangibles

Balanced Scorecard is the concept advanced by Robert S. Kaplan (of Activity Based Management fame) and David P. Norton that recognizes achieving a comprehensive view of an organization's performance requires the monitoring of future potential, as well as the past performance. This is consistent with a growing interest and focus on intangible assets, as well as the tangible assets, and is imperative because the value of sustainability is not just in the financials.

As the products and organizations evolve with sustainable consciousness, it is important to recognize the changing drivers. Although financial KPIs formerly provided the necessary performance monitoring and measurement, the evolving organization requires the reporting and analysis of non-financial aspects of the organization including the customer, the internal processes, and the learning and growth of personnel. The Balanced Scorecard includes the following four focuses:

- ***Financial perspective -*** This perspective contains the financial results such as profit, return on capital, cash flow, and margins. As mentioned, these KPIs are primarily looking backwards. The financial measurement of sustainability will be through revenue, cost, and capital results from reductions in waste, reductions in energy usage, through lifecycle extensions of capital, through reduced inventories, etc.
- ***Customer perspective -*** The customer's requirements are especially accentuated in Demand Driven Supply Network (DDSN) and customer driven strategies. Value as defined by the customer is a mix of commodity, quality, time, price, service, relationship, carbon effects, etc. Ultimately,

the customer will judge, or measure, in terms of cost, innovation, partnership, image, customer service, durability, form/fit/function, and sustainability. The customer's sensitivity and awareness of sustainability will be measured based on how the company's products, services, and relationship meet their sustainability KPIs. Packaging, distribution, product lifecycle, disposal impact, energy consumption (in operating the product) will be such indicators.

- ***Internal perspective -*** The internal perspective includes how a company creates demand and products, how it delivers to the customers, and its affects socially on the community (environment, safety and health, employment). The resultant processes that foster sustainability from a financial and customer perspective, will embed sustainability. The materials consumed (direct, packaging, MR&O, office, other indirect), the processes utilized, the energy consumed throughout the supply chain, the waste and excesses, the buildings, the transportation, the implementation requirements (at the customer), and finally the disposition (return, disposal) will have direct impact and consequence on the company's success in building a sustainable enterprise and supply chain.
- ***Learning and growth perspective -*** Ever increasing focus on the intangible assets of an organization includes human, information and organizational capital or capacities. Human capital (knowledge, experience, competencies, readiness), organization capital (culture, leadership, alignment, teamwork), information capital (transactions, analytics, transformation of business) are fundamental to the evolution of the organization and its intangible assets, and have a direct correlation to sustainability.

***So What*?** *As a company evolves its products and organization with a sustainable enterprise and supply chain, it becomes imperative to recognize that success will not always be immediately defined by "historical" financial measures. The Balanced Scorecard is an approach to align all initiatives in an organization, in recognition of forward-looking and external factors. The monitoring and displaying of the influential KPIs will ultimately motivate the desired behavior of the organization. A company's success in attaining a sustainable enterprise and supply chain is ultimately dependent on the processes and systems in place to enable, monitor, and manage commerce, capital, and infrastructure accordingly.*

Value of OEE Improvement

Overall Equipment Effectiveness (OEE) is a compounded metric that indicates the resultant % output of good parts relative to theoretical potential output for a given work center, production line, department or other business unit. While there are multiple factors of influence, and variations on how to calculate, OEE provides a relative measure of improvement over time. Increasing the OEE towards 100% is directionally "good", if properly aligned to the overall business objectives.

OEE is calculated by recognizing the available capacity (vs. theoretical), the performance of the available capacity (vs. a standard), and the resultant quality of the output (good parts vs. total parts). It is a compounded metric (availability * performance * quality), thus erodes quickly.

The business impact of Overall Equipment Effectiveness improvement can be quickly estimated through the use of the OEE Improvement Model, which considers the key factors that impact the measure including OEE GAP (As-Is% to To-Be%), OEE Factors (A%, P%, Q%), Contingency type and amount, Investment to improve, and Demand. It is conceivable that each 10 Point improvement in OEE results in 3 to 5 Points of Gross Margin – although it will vary based on the underlying variables. Additionally, another 1 to 3 Points of Gross Margin are benefits when BI is used to proactively manage the business, enabling a faster realization of improvement benefits, as well as enabling new opportunities.

So What? *While OEE is one metric, it encompasses a broad set of variables that ultimately determine the capabilities of the respective production scope. OEE not only tracks the output potential, it also provides insight as to areas of improvement which can have the greatest impact on the top and bottom lines of the business. This is especially important for bottleneck operations and/or businesses.*

Alignment to Business Objectives - Series on Alignment of COMPANY Solutions to Business Objectives

Alignment of Business Objectives to Actions

Establishing the value of any technology and process change requires an understanding of how the initiatives support the overall business objectives – which establishes the true value. Generally, the business objectives are rooted in optimizing measures of revenue, cost, and capital. COMPANY solutions may have varying impact on all three measures, subject to current capabilities and scope of deployment.

Some high level business objectives such as Improve Earnings Per Share, Increase Customer Service Levels, etc. are not directly calculated from changes in Revenue, Cost, and/or Capital, although they either directly affect or are affected by such changes. However, the following business objectives are examples that can be directly aligned to COMPANY solutions:

- Revenue Growth - (Price, Volume, New Business, Campaigns, etc)
- Reduced Cost of Goods Sold (COGS) – (Direct Material, Labor, Burden)
- Reduced Selling, General & Admin. (SG&A) – (Sales, IT, Admin/Executive)

- Increased Operating Income Margin - (Higher Revenue, Lower COGS, R&D, Transportation, and SG&A Costs)
- Reduced Days Sales Outstanding (DSO) – (Receivables visibility, analysis, and management)
- Reduced Days of Supply (DOS) – (Visibility, Planning, Lead Time reduction, Sourcing, etc.)
- Increased Days Payables Outstanding (DPO) – (Payables visibility, analysis, and management)
- Increased Fixed Asset Effectiveness – (Visibility, Planning, Lead Time reduction, sourcing, asset maintenance and scheduling, etc.)

So What? *– Executives will ultimately approve projects and judge success. Their valuation is less related to "bits and bytes" nor "feature and function". They speak the language of "how are you driving value for our stakeholders?" as defined by the business objectives and goals. Rather than promoting new forecasting techniques, inventory planning collaboration, or .Net usability – we should promote Days of Supply (Inventory) reduction and higher Net Operating Income Margin.*

Alignment to Business Objectives (Part 1) - Overview

A company will establish business objectives based on its strategic direction and shareholder interests. While MBA 101 for public companies suggests that "profit" or "shareholder value" is the key motivator, there is a multitude of approaches on how to establish the competitive advantage.

For example, a company may state: *"ABC Company provides unparalleled customer responsiveness with products and services, while achieving operational excellence and competitive advantage. Our 2010 business objectives:*

- *Be the top-ranked supplier to our customers.*
- *Grow our earnings per share by x% per year, from $X to $Y.*
- *Achieve an average return on capital (ROC) of Y%, vs. current X%.*
- *Attain Z% of sales from products that are 3 years old or less, vs. current X%.*
- *Increase output per employee by at least 5% per year, from $X/employee to $Y/employee."*

ABC will then identify strategies and initiatives to achieve those objectives, as well as enablers such as COMPANY solutions:

"ABC's [project name] initiative is aligned through improved efficiencies, error reduction, risk avoidance, asset effectiveness and faster introduction to new customers, with increased velocity of cash. The COMPANY solution provides a robust, proven capability to enable this achievement."

Some high level business objectives such as Improve Earnings Per Share, Increase Customer Service Levels, etc. are not directly calculated from changes in Revenue, Cost, and/or Capital, although they either directly affect or are affected by such changes. However, the following business objectives are examples that can be directly aligned to COMPANY solutions:

- Revenue Growth
- Reduced Cost of Goods Sold (COGS)
- Reduced Selling, General & Admin. (SG&A)
- Increased Operating Income Margin
- Reduced Days Sales Outstanding (DSO)
- Reduced Days of Supply (DOS)
- Increased Days Payables Outstanding (DPO)
- Increased Fixed Asset Effectiveness

In subsequent factoids we will explore each objective, including how COMPANY solutions are enablers.

So What? *Alignment is essential to ensuring that the organization (people, processes, assets) are focused on achieving the shareholder interests. Conversely, keeping inventory that isn't usable, or producing products that aren't sellable, or running equipment that merely makes scrap – are all efforts in futility!*

Alignment to Business Objectives (Part 2) – Revenue Growth

Top-line revenue is one of the most important financial items a company manages. Investors analyze not just the dollar amount of revenue but, even more important, the percentage growth in revenue. Revenue growth simply measures the year-over-year percentage change in revenue. It's calculated as: (Revenue this period - Revenue last period) / Revenue last period

The period for measuring revenue growth can vary. But typically, it's for a 12-month period ending in the company's most recent fiscal quarter.

Example:

- A company has $10 million in revenue this year.
- $9 million the previous year.
- Revenue growth is 11.0% ([$10m - $9m]/$9m).

The business objective Revenue Growth is achieved through specific strategies to grow volume, increase price, expand new products and markets, etc. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**

Sell to new channels	CSS, SSM, PIM, CRM
Introduce new products	PIM, Configurator, SSM, CRM
Mass customization of products	Configurator, CSS
Sell add-on services and warranties	SSM, FSS, MFS, CRM
Improve customer service	CRM, CSS, SSM,
Enable customer self service	CSS
Match product to market demand	DM, Lean, Configurator
Marketing campaign management	CRM
Manage rebates & trade promotions	TRM

So What? *Top line revenue growth, whether organic or through new products and markets, is a significant driver to bottom line profitability and shareholder value. As they say, "It all begins with the sale".*

Alignment to Business Objectives (Part 3) – Reduced Cost of Goods Sold (COGS)

Cost of Goods Sold (COGS) is comprised of expenses directly related to the provision of the products or services reflected in revenues. To that end:

- For manufacturing companies, major categories are raw materials, direct labor costs and factory overhead.
- For distribution and retail companies, the main category is the purchase cost of the products sold.
- For service companies, Cost of Services Sold primarily includes people-related expenses and payments to third parties for products and services utilized in the provision of the service.

Comparing a company's COGS over time or to that of other companies using only dollar amounts is challenging because as a company grows, so does the COGS. This doesn't mean that larger - or growing - companies are less effective at managing these costs. In fact, it doesn't say much at all!

However, COGS expressed as a percentage of revenue, or Gross Margin % ((Revenue – COGS)/Revenue), provides a more relevant measurement. For example, a company that has $10 million in revenue and $6.0 million in COGS, has a COGS as a Percentage of Revenue of 60.0% ($6m/$10m) and a Gross Margin % (Revenue-COGS)/Revenue of 40%.

Gross Margin $ can be driven purely by volume, as well as product mix, increased price, and reduced COGS. Gross Margin % is typically driven by increased price, reduced COGS, and product mix (volume alone does not necessarily increase Gross Margin %).

The business objective Reduced Cost of Goods Sold is achieved through specific strategies to grow volume, reduce purchase price, improve efficiency and effectiveness of processes, re-design products, etc. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**
Reduce Purchasing Cost	Lean, SCP, Consignment, DRP, Pro/Plus, EDI, BI, PLM
Run plant more effectively	Lean, QPS, EAM, WMS, SCP, JITS, Pro/Plus
Improve efficiency of customer relations	JIT, MEW, configurator, crm, consignment, TMS, WMS
Reduce landed cost of raw & component materials (material spend)	SCP, TMS, Logistics Accounting

So What? *Cost of Goods Sold (COGS) is reflective of product design, volume, sourcing leverage, operations effectiveness, etc., and, when subtracted from Revenue, determines the Gross Margin. Although reduced COGS can be analyzed in $, a more reflective measure is COGS % of Revenue - which suggests how effective a company can deliver its products.*

Alignment to Business Objectives (Part 4) – Reduced Selling, General & Admin. (SG&A)

Selling, General and Administrative (SG&A) includes expenses related to marketing, promoting and distributing products and services. Other major items are corporate administrative expenses such as accounting and finance, planning, human resources, research and development, IT, and maintenance of administrative facilities.

Just like cost of goods sold or operating income, analyzing a company's SG&A over time or comparing it to the SG&A of other companies using only dollar amounts is challenging because:

- As a company grows, so does SG&A.
- Larger companies typically have higher SG&A than smaller organizations.

SG&A is expressed as a percentage of revenue to mitigate the impact of a company's size. For example, in company that has $10 million in revenue, and $1.0 million in selling, general and administrative expense, the SG&A as a Percentage of Revenue is 10.0% ($1m/$10m).

The business objective Reduced SG&A is achieved through specific strategies to improve efficiency and effectiveness of processes, and outsource of functions that are not distinctive competencies. COMPANY solutions are enablers to those strategies, including:

Business Strategies	COMPANY Solutions
Reduce reliance on Spreadsheets	.NetUI and Usability (operational metrics, reporting framework, process maps), Browse and Reporting, BI
Eliminate non-value-add processes	Financials, CRM, SV, Consignment, TMS, EAM, EDI, PIM, PLM, CSS, SSM, Configurator, eRMS
Process Re-engineering	Process Maps, Services
Consolidate and Simplify functions like AR & AP	Financial Shared Services, Pro/Plus (Self Billing)
Implement more efficient sales & marketing processes	CRM, CSS, Pro/Plus, Consignment, SSM
Reduce or Outsource IT, other processes	AMS, Cloud, Upgrade Core, .NetUI and Usability, BillTrust

So What? *You not only have to design and produce the product/service – you have to establish the business processes that facilitate the commerce with your customers. Sales, General & Administrative (SG&A) is reflective of support costs required to ensure that commerce. Whether conducted internally or outsourced, SG&A expenses are critical infrastructure enablers.*

Alignment to Business Objectives (Part 5) - Increased Operating Income Margin

Operating Income is Revenue minus COGS, SG&A, R&D, and Depreciation/Amortization. Analyzing a company's operating income over time or comparing it to other companies using only dollar amounts is challenging because:

- As a company grows, so generally does operating income.
- Larger companies typically have higher operating income than smaller organizations.

Expressing operating income as a percentage of revenue, which in finance is called the "Operating Income Margin," mitigates the impact of a company's size and facilities comparison over time and across companies. For example, in company that has $10 million in revenue, and $.8 million in operating income, the Operating Income Margin as a Percentage of Revenue is 8% ($.8m/$10m).

The business objective Increase Operating Income Margin is impacted by business model factors such as product mix, pricing, design, operational efficiencies, supply chain rationalization, outsourcing, pre-production/design complexity, capital intensity, volume/turn over, etc. Performance by industry ranges from low end for distributors, computers, semi conductors to high end pharmaceutical, as the following table shows (source: 2010 FinListics)

Industry	Median Operating Income Margin	1st Quartile Operating Income Margin
Semiconductors N.AM. (SIC:3674)	-1.4%	9.2%
Computer and Office Equip. (SIC:357X)	1.2%	6.7%
Motor Vehicles & Equip. (SIC:371X)	1.5%	4.3%
Industrial Mach. & Equip. (SIC:35XX)	4.2%	10.5%
Medical Instr. & Supplies (SIC:384X)	5.8%	16.0%
Construction & Related Mach (SIC:353X)	7.6%	14.8%
Pharmaceutical Prep. (SIC:2834)	8.6%	22.5%

So What? *As in most metrics, Operating Income Margin should be put into context of the type of business and the business model factors. And, in order to determine true progress in this metric, it should be calculated as a ratio relative to Revenue. Ultimately, this comprehensive metric reflects how efficient and effective an organization is with its sales (revenue), design& delivery (COGS, R&D), and infrastructure (SG&A, Depreciation/Amortization).*

Alignment to Business Objectives (Part 6) - Reduced Days Sales Outstanding (DSO)

Accounts Receivable (AR) are moneys owed to a company by its customers for products and services they've purchased. AR typically grows if revenues are increasing - and shrink if they're decreasing. With this in mind, the key question is: Has the relationship between accounts receivable and revenue changed?

Insights into this question are provided by examining Days Sales Outstanding (DSO) - the number of days it takes to collect sales. It's calculated as: Accounts Receivable /

Revenue per Day where Revenue per Day = Revenue / 365 Days. For example, a company that has $10.0 million in revenue and $1.5 million in accounts receivable, would have a DSO of 55 days ($1.5m / ($10m / 365 days). The level of DSO is an indicator of the velocity of cash – from sale to collection. Also, the age of the receivable and the credit worthiness of the customer is an indicator of the probability that a company will collect the funds since a certain % of its customers will default for various reasons. A receivable that is 90 days old owed by a customer that has questionable credit history is less likely to be collected than a receivable owed by a very good customer that is 30 days old.

The business objective Reduced DSO is achieved through specific strategies to improve efficiency of the collection of funds once a sale exists. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**
Improve accuracy of sales pricing and discounts	COMPANY TRM/APM, SSM, Logistics Accounting
Accelerate visibility & distribution of sales invoices	CSS, EDI-Ecommerce, CRM, SSM
Enable customer initiated payment systems	Pro/Plus Self-Billing
Consolidate functions between AR & AP	COMPANY Enterprise Financials, COP

So What? *Companies are in business to generate a profit and increase shareholder value. Even if they have the best products and fulfillment, supply processes, it is a moot point unless they can collect from their customers! And, not only collect – but to collect it in a reasonably short cycle from when they commit funds for the commerce transaction. As they say -Time is money.*

Alignment to Business Objectives (Part 7) - Reduced Days of Supply (DOS)

Inventory is a necessary evil. It is used to buffer against imperfect supply and complex processes, while attempting to satisfy demand variability, unpredictability, and customer contractual requirements. For most businesses, the current level of inventory is excessive due to faulty planning, scheduling and execution, as well as life cycle effects (startup, obsolescence). Companies typically have 30 to 50% more inventory than is needed (target).

Inventory is measured as the value at cost of products a company's purchased or produced, but not yet sold. It consists of funds invested in:

- Raw Material (manufacturer only).
- Work-In-Process (manufacturer only).
- Finished Goods.

Inventory primarily exists because of imbalances in the rates products are produced and sold. You can't tell how effectively inventory is managed simply by looking at the dollars invested in it. Inventory typically varies with revenue and the resultant Cost of Goods Sold. However, clues as to how well inventory is managed are provided by Days In Inventory or Days of Supply (DOS) - the number of days money is invested in inventory. DOS measures the average number of days it takes a company to sell its products – starting with raw materials (if applicable) through finished goods, and is calculated as (Inventory / Cost per Day), where Cost per Day = Cost of Goods Sold / 365 Days. Cost of goods sold is used in the cost per day calculation since inventory typically is valued utilizing cost of goods sold. For example, a company has $1.0 million in inventory, and $6.0 million in cost of goods sold, thus DOS is 61 days ($1.0m / ($6.0m / 365 days).

The business objective Reduced DOS is achieved through specific strategies to balance inventory positions relative to the business demand and processes. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**
Revise Inventory Planning Processes	Supply Chain Planning – Distribution Requirements Planning & Enterprise Operations Planning
Revise Sales Forecasting Processes	Demand Management
Lean Processes in Manufacturing & Supply Chain	Lean, Just in Time Sequencing, Supply Visualization, Production Scheduler, DRP, TMS, Warehousing
24x7 Supply Chain Collaboration	Supply Visualization
Rationalize Product Range	PLM, PIM

So What? *In an ideal world, all demand requirements would be perfectly satisfied by fulfillment processes that meet the service level and lead time expectations. However, the imperfections of the real world result in necessary buffers of capacity and inventory. Although inventory requires an investment of capital and additional carrying costs, the alternative is a potential loss of revenue and/or customers.*

Alignment to Business Objectives (Part 8) - Optimized Days Payables Outstanding (DPO)

Accounts payable are moneys a company owes suppliers for services provided and components bought but not yet paid for. Accounts payable typically don't bear an explicit rate of interest. There is, however, an implicit rate in the prices suppliers charge. These implicit charges show up in:

- Cost of Goods Sold for direct procurement.
- Selling, General and Administrative expenses for indirect procurement.

Clues into how effectively accounts payable are managed are provided by examining Days Payables Outstanding - the average number of days it takes a company to pay suppliers. In the language of finance, days payables outstanding is referred to by the acronym "DPO." DPO also provide valuable insights into whether or not a company will pay on time.

DPO is calculated as Accounts Payable / Purchases Per Day, where Purchases Per Day = Purchases / 365 Days. Cost of goods sold is often used in the calculation as a proxy for purchases since companies typically don't provide public information on purchases. Using cost of goods sold, therefore, overstates the true purchases per day and, in turn, understates DPO. However, since DPO is calculated for all companies using cost of goods sold, this helps facilitate comparison across companies. For example, a company that has $0.5 million in accounts payable and $6.0 million in costs of goods sold (COGS), would have a DPO of 30 days ($0.5m / ($6.0m / 365 days).

The business objective Reduced DPS is achieved through specific strategies to increase process efficiency while taking advantage of time-value of money and adhering to contractual arrangements with suppliers. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**
Reduce reliance on Spreadsheets	.NetUI, Browse, Reporting, BI
Eliminate non-value-add processes	Financials, BI, SV, Release Management, Purchasing, Requisitions, EAM, EDI Ecommerce
Delay Payment	Consignment, AP, TrM, APM
Increase and automate supplier communication	SV, EDI-ECommerce
Order what is needed and ensure delivery of when it is needed	DM, Forecasting, MRP, Purchasing, SV, Lean

So What? *Don't assume that extending Payables is an advantage! Even though extending Payables provides a theoretical savings due to the time value of money, a true partnering with suppliers should include timely settlement of the Payables (based on contractual agreements). Also, while the calculation of Cash-To-Cash actually improves as you extend out Payables (Cash-To-Cash cycle = DSO+DOS-DPO), the increased cycle of payment only penalizes the supplier – who likely would increase their prices to pay for financing. In other words, a streamlined supply chain should consider the overall efficiency and effectiveness of the entire supply chain.*

Alignment to Business Objectives (Part 9) - Increased Fixed Asset Effectiveness

For many companies, Net Property, Plant & Equipment (PP&E) (Gross Property, Plant & Equipment less Accumulated Depreciation) represents a significant part of the investment in the business. It's difficult to develop clues regarding the performance of net PP&E simply by looking at the dollars invested. But, you can find clues as to how effectively fixed assets are managed by examining Fixed Asset Effectiveness (Utilization). Fixed asset utilization (or Fixed Asset Turnover) is measured by: Revenue / Net Property, Plant & Equipment

Fixed asset utilization measures how many dollars of revenue are generated for each dollar invested in net PP&E. For example, a company that has $10 million in revenue, and $5 million in net fixed assets, would have a fixed asset utilization of 2.00 ($10 million / $5 million).

This means the company generates $2.00 for $1.00 invested in net fixed assets. The higher the fixed asset utilization the better, holding all else the same (which hardly ever happens). You would much rather generate $2.00 than $1.50 in revenue for a dollar invested in net fixed assets.

The business objective Increased Fixed Asset Effectiveness (utilization) is achieved through specific strategies to increase revenue, increase capacity utilization, increase lifecycle of assets, and/or outsource. Of course, while outsourcing improves this measure, it is only a good strategy if it meets other objectives for quality, cost, timeliness, etc. COMPANY solutions are enablers to those strategies, including:

Business Strategies	**COMPANY Solutions**
Improved Scheduling Across Assets	QPS, Lean, DM, SV, JITS, Manufacturing Planning, Manufacturing Execution
Timely Preventative Maintenance	EAM- Plant Maintenance
Better Tracking of Asset Depreciation & Useful Life	Fixed Assets
Tighter controls on MRO Inventory	EAM- MRO Inventory, MRO Purchasing
Improved handling of new asset Start-up	EAM- Project Management

So What? *The infrastructure of a company is established by investments in fixed assets, as well as working capital and people. Traditionally, the fixed assets established competitive advantage, especially in capital intensive manufacturing companies that required proprietary processes. As companies evolve their distinctive competencies to intellectual property, sales and marketing, engineering, and distribution – the fixed assets become a less significant factor. As mentioned in “Customer Market Value- declining impact of Tangible Assets”, the tangible assets* *are declining as an indicator of market value. However, for any investment – the objective of increasing its utilization is beneficial.*

Business Functional View - Facts or Factoids on various aspects of Product, Demand, Supply, Operations

Benefits & Investments (Part 1) – Basics of Business Case

Companies require a justification for any capital project. Commonly referred to as Return On Investment (ROI), the objective is to compare the time-phased investments (their project capital and expense) for enabling a business change (e.g. process, equipment, software) vs. the time-phased benefits, or impact to their revenue, costs, and capital.

This comparison is reflected in numerous financial ratios, including:

Return On Investment (ROI) – (Benefit – Investment)/Investment, expressed as %, where the higher the ratio (when compared to alternatives), the better the investment. *Caveat: Ratio does not consider the time span, and can be manipulated (what is considered benefit or investment)*

Payback Period – Investment/Annual Benefits, expressed in months or years, where the lower the ratio (when compared to alternatives) the better. It is not uncommon for companies to have a requirement for a 12 or 18 month payback or less. *Caveat: Ratio does not consider the time span, and can be manipulated (what is considered benefit or investment)*

Net Present Value (NPV) – The present value of future investments and benefits, expressed in currency, where the higher the value (when compared to alternatives), the better the investment. Companies may use the actual capital investment, or use the annual depreciation of that capital, which reflex the actual tax implications as well. Similarly, they may use the actual capital reduced as benefits (e.g. inventory), or the annual carrying costs, or both. Each year is discounted to the present value using a discount rate (subject to inflation and returns). *Caveat: Potential of double-counting (e.g. capital vs. depreciation), compounding effect (% reduction when the base decreases annually), incorrect discount rate (distorts the later years), and comparison of projects with different duration*

Internal Rate of Return (IRR) – Similar to NPV, except that it is calculating the discount rate that results in a NPV of 0, expressed as % – using the NPV rules for investments and benefits. When comparing alternatives, the higher the IRR % the better. *Caveat: Potential of double-counting (e.g. capital vs. depreciation), compounding effect (% reduction when the base decreases annually), and comparison of projects with different duration*

There may be other metrics highlighted in the business case such as impact on their business objectives (e.g. % revenue growth, increased gross margin, increased inventory turns, etc.), but these do not necessarily reflect the investment needed to achieve the improvement. Conversely, companies may have restricted budgets for projects with a cap on expenditures, but these limits will not necessarily reflect the potential business benefits.

So What? – *The customer will typically identify which financial ratio is needed for their business case. The key will be to understand their formula, their treatment of the investments (capital or depreciation) and benefits (especially the capital benefits), and their requirements for going forward with the project.*

Benefits & Investments (Part 2) – Benefits Overview

When quantifying the benefits in a business case, we project the value of closing the gap between current processes and "to-be" processes. The time-phasing of the benefits will compare the annual impact of the changes vs. what would happen if you didn't make the changes. The gap is evaluated based on the impact on Revenue, Cost, and Capital. For example:

- Will closing the gap impact Revenue through increased pricing, increased volume (due to improved customer service, self-service, campaigns), new markets and channels, avoidance of lost orders, increased value-add, new services, improved management of rebates and promotions, etc.?
- Will closing the gap decrease costs such as material spend, operational productivity, SG&A, IT, R&D, premiums, penalties, 3rd party, waste, transportation, inventory carrying costs, asset downtime, asset depreciation, cash flow collection/payment…?
- Will closing the gap increase the velocity of working capital (inventory, receivables, payables), and reduce the investments fixed assets (process equipment, MR&O, tooling, facilities), etc.

So What? – *Any process change has the potential of impacting Revenue, Costs and/or Capital. A complete business case requires the evaluation of the respective process, and the upstream and downstream effects. And, the benefits are always calculated as the gap between "doing nothing" and "implementing the change".*

Benefits & Investments (Part 3) – Investments Overview

The Business Case analysis requires quantification of all investments, associated "costs" for implementing and maintaining the respective project. These investments should be aligned with each alternative, and time-phased with the roll-out plan. Some of the investments are external, where the customer pays COMPANY or other service providers. Some of the investments are internal, which are further segmented as directly incremental due to the project and indirectly related. The customer will determine which investments to include.

External

- License For New Functionality
- SaaS, Lease fees
- Subscriptions
- New 3rd Party Services Vs. Eliminated Services
- Legacy sunsetting (eliminating applications replaced)
- Annual Maintenance
- Software upgrade

Internal (or Both)

- Internal IT services
- Business Process Modeling
- Customization
- Interfaces, Integration
- Data Conversion
- Infrastructure
- Ongoing support
- Change management
- Internal staffing, etc...

So What? *– The business case is a time-phased comparison of investments and benefits. The customer will determine which investments to consider in the analysis, and it is not unusual that the Internal investments are equal or more than the external benefits. Rule of thumb – whatever COMPANY quotes in license, maintenance, subscriptions, and services –* ***"Double it"*** *for the business case!*

Design Drives >75% of Product Costs

As companies continue to emphasize innovation for competitive advantage, and when ensuring demand-driven requirements based on the customers' expectations, it is essential to understand that more than 75% of the product cost is "baked-in" during design. The configuration, material specification, tolerances, supply requirements, manufacturability, serviceability, durability, etc. are determined before the product is released to production. Collaboration between all business functions is essential to ensure the optimum design. Conversely, if production is not involved until after the product is released with a committed Bill of Material - there's less chance to have significant cost reduction impact.

A great example is the comparison of an existing shaft sleeve (industrial pump) that requires 7 operations including multiple turning operations, heat treating and grinding, in which Production negotiates a 5% material price reduction. Now compare that to a redesigned shaft sleeve that requires only 1 operation! Do you think the 5% price reduction had the biggest impact OR the single operation?

So What? *When looking for opportunities to have a significant impact on product cost, you need to look upstream to Design. Afterall, you have a greater result if you "design it out" rather than try to "grind it out"!!*

COMPANY Value Card – Product Lifecycle Management

Product Lifecycle Management (PLM) manages interdependencies across all forms of product information, so that everyone on the team can easily understand how their input impacts the overall product. Fast, secure, and requiring only a Web browser to access, this business collaboration software enables companies to streamline product development processes and deliver superior physical goods and information products.

PLM compliments enterprise manufacturing solutions and directly integrates with them, allowing customers to realize shortened project cycles, significant cost savings, improved product quality, increased customer satisfaction and enhanced market positioning.

The Value of PLM

- Single source of product information/content enables development efficiencies, reduces errors and rework
- Complete product definition and collaboration capabilities expertly drive cross-enterprise understanding of information - regardless of source
- Repeatable, end-to-end process support and automation speeds time-to-market and reduces development cost
- Secure, industry-standard Internet architecture delivers a safe, high-performing technology platform
- Automatic product data sharing with downstream manufacturing systems and engineers reduces scrap and rework

Product Lifecycle Management impacts Revenue, Cost, and Capital as follows:

- Reduced time to market 10-20%, with positive impact to revenue capture, window of opportunity, and competitiveness
- Reduced product cost 20-50%, including materials and production costs
- Improved parts rationalization and re-use, with reduced parts number 20-30%
- Inventory optimization, with reduced inventory 5-10%
- Reduced engineering costs 10-20%, with automation through workflow and improved accuracy
- Reduced engineering change 10-25%
- Reduced document retrieval time 20-50%

So What? *Product design drives 75+% of the product costs, and much of the company's true market value is premised on its "intelligence" that is captured during* *the conception, design, and production stages. In order to preserve this intangible asset, a company requires collaboration with all business partners, well managed documentation and workflow, and ease of maintenance once the product is in production. Much like the fasteners that hold the product together – PLM is the glue that holds the "design and product intelligence" together.*

PLM Value in a Digital World

Manufacturing companies are evolving their business model, including the outsourcing of manufacturing, growth through considerable mergers & acquisitions, expanding their products with value added services and software, etc. No matter where the "delivery" processes end up - the "design, development, and product intelligence" will be a fundamental competency AND a key differentiator and competitive advantage. This is recognizing that much of the value will be digital.

In fact, as mentioned in the factoid *Customer Market Value- declining impact of Tangible Assets,* the general trend in industry is that Market Value is driven much more by the intangible assets (including product intelligence, software, branding...) as opposed to tangible assets. In North America, the Tangible Assets/Market Value ratio has gone from 62% in 1982, to< 10% in 2010 (per Robert Kaplan-Harvard). This morphing of the business model, AND the evolution of products from physical to digital, software, and service, accelerates the need to have a management system that moves data as well as parts. Product Lifecycle Management is fundamental to how companies will manage their business through collaboration, workflow, and document management. And, its value is in faster time to market, reduced cost of engineering changes, decreased part administration costs, and reduced design costs – not to mention the increased market value when you properly manage the digital assets.

So What? *Imagine a factory where, instead of metal parts moving and transforming into a delivered product, you move data. Each step of the way, value is added digitally – either dimensionally or through added software – or just due to progressive authorizations. And, much like an inventory system for parts, the document management retrieval system delivers the "digital part" as needed. The only difference? When you use a metal part, it is used up. When you use a digital part, it is still there! Infinite supply!!!*

Demand Driven Value

Competing successfully as a customer-centric, demand-driven business requires a change in fundamental methods and measurements as enabled by Demand Driven Supply Network strategies (DDSN). Companies can no longer prosper by supply-based principles of "sell what you make," with a pre-structured, one-size-fits-all approach. DDSN strategies require comprehension and fulfillment of the customer's business value – as they define it. Today's customers, with heightened shopping intelligence and expectations for "near perfection," enjoy an ever increasing selection of alternative solutions. Satisfy their needs or they will easily "surf" elsewhere.

Meeting the potential proliferation of demand SKUs requires agile, predictive, effective, efficient and innovative processes – from initial demand signals, to product development, to final delivery. Strategies must align to the company's business objectives, accommodate the influential external factors (such as regulatory, economical, environmental, technological and competitors) and synchronize all processes, people, and technologies.

So What? *- DDSN can actually be a positive impact to company performance. What initially would seem to be a detriment has proven to increase Revenue by 10%, increase Gross Margin 3 to 8 points, increase Net Operating Profit by 5 to 10 points, and reduced Cash-to-Cash Cycles by 20-40%*

COMPANY Value Card – Demand Management

COMPANY Demand Management – with its Demand Management Engine, Collaborative Portal, Inventory Optimization, and Rough Cut Capacity Planning components – enables virtually all aspects of demand management, including forecasting, error tracking, inventory optimization, supply chain collaboration and flexible reporting.

Collaboration is allowed with all demand sources, leveraging sophisticated forecasting methods, and detecting fluctuations in forecasts and demand as soon as they happen. Exceptions can be communicated instantly, enabling the optimization of production and fulfillment.

The Collaborative Portal provides a platform for Collaborative Planning Forecasting and Replenishment (CPFR), which is commonly required in consumer products supply chains.

Demand Management impacts Revenue, Cost, and Capital as follows:

- Inventory can be reduced 8-10% in short term (6months), 12-70% over a 2-3 year period
- Fill rates can be increased 10-15%
- Customer service levels increased by 4-5%
- Distribution and transport savings 5-30%
- On-time delivery to customers of 10-40%
- Reduced obsolescence and inventory write offs 30-50%
- Reduced service parts inventory 30-60%
- Total cost reductions 1-2%
- Plant efficiency improved 2-33%
- Improved forecast accuracy 5-20% (short term return)
- Improved Profit: 1-3%
- Reduced Transport costs 30-50%

So What? *In the demand driven economy, whether make-to-order, or build to stock, the supply chain costs are driven by factors such as the capacities, flexibility, methods of transportation, customer expectations, etc. – as well as the resultant* *inventory that buffers and binds it together. Competitive advantage is gained through how well you can synchronize demand with supply.*

Value of Forecast Accuracy – Driving Profitability and Return on Assets

Demand drives the supply chain in terms of what to produce and when to produce it. In a perfect world, as demand is first identified (e.g. customer order), the supply chain could instantaneously fulfill the demand perfectly – with no buffers of inventory, no wasted capacity, no premium freight or labor… Oops – was I dreaming!?

The reality is that there are considerable dynamics and competition for precious resources (money, people, assets, time…). It is imperative that a company matches supply to demand within its constraints – else risk not meeting their customer expectations. However, even when capacity and resources are abundant, there is another challenge when the lead time to supply (cycle time of consecutive "stages") is greater than the lead time required by demand. At minimum, the supply chain must provide raw materials, semi-finished products, and/or finished products within the demand lead time by producing "stages" within that lead time, or in the form of inventory. Similarly, capacities and labor must be available as needed.

So, if the supply lead time is greater than demand lead time, rather than drive the supply chain by orders, a company will drive by forecast. And the accuracy of the forecast will determine how much waste you drive into the supply chain – and how much risk to your demand.

The cost of forecast inaccuracy (FA) is complex, but is measured in terms of inventory, premium freight, capacity utilization, lost revenue, downtime, expedited labor, returns, scrap, etc. The actual costs are particular to each company, and depend also on the current forecast accuracy and the current level of service (LOS) requirement. The benefit of improving FA will also depend on the current FA, projected FA, current LOS, and projected LOS – vs. – the costs to make the improvement.

There has been research and anecdotal evidence to show the following:

- FA has exponential impact on costs – going from 90% to 99% FA is 75% less impact to downstream errors, than going from 60% to 69% (based on inverse of standard normal distribution)
- Cost to improve FA is exponential – going from 60% to 69% is 75% less capital and expense vs. going from 90% to 99% (law of diminishing returns)
- Investment (e.g. inventory) to achieve LOS is exponential

So What? *– Forecast Accuracy is not just a measure to reflect skills at “hitting a target” – it is a driver of performance downstream through the supply chain, and ultimately impacts how well you meet your customer needs. Be careful when someone says “I have one hand in boiling water and one hand in ice – on average I’m doing fairly well”!!!*

COMPANY Value Card – Configurator

Configuring orders to customer specifications can be a time consuming, error prone process. With COMPANY Configurator, your customers can have it their way, allowing order entry personnel to easily, quickly and accurately configure complex products based on pre-approved engineering and sales business rules.

Part of the Customer Management suite within COMPANY Enterprise Applications, COMPANY Configurator simplifies and streamlines product customization in a Configure-to-Order (CTO) or Assemble-to-Order (ATO) environment. Sales personnel work from a pre-defined questionnaire to rapidly and accurately customize products based on customer need, generating a new variant item, complete with pricing.

Configurator impacts Revenue, Cost, and Capital as follows:

- Reduces sales cycle cost by lowering quotation and order entry time and effort – 10 to 50%
- Improves customer satisfaction, retention and loyalty by quickly configuring products they specific to their needs – 10 to 20%
- Increases revenue by attracting customers with custom configuration needs – 5 to 10%
- Improves efficiency by allowing engineering to focus on design and innovation – 10 to 50%
- Reduces product lead times through rules-based translations into actual items, products structures, and routings – 10 to 50%
- Reduced Cost of Goods through efficient selection and accuracy, enabling supply chain efficiencies – 5 to 10%

So What? *Configurable products are susceptible to complexity and errors due to the proliferation of combinations and options. A rule-based approach to automate the order entry process and that ensures proper selection of options provides efficiency through the entire supply chain, and avoids potential risk and error. This is especially invaluable in a demand-driven world where customers are requiring even greater differentiation.*

COMPANY Value Card – Customer Self Service

COMPANY Customer Self-Service (CSS) is a complete Web storefront and self service portal that can be tailored to integrate directly into a company web site, supporting 7x24 order management and customer self service (tracking order status, availability etc).

COMPANY CSS offers a personalized, secure order management system, with browser-based order entry and visibility. Features and functionality within COMPANY CSS enables optimized end-to-end order fulfillment and improved response throughout the supply chain.

Items, customer information and pricing can be accessed directly from existing COMPANY Enterprise Applications records and can be easily tailored to any corporate appearance and content. Personalized screens can be individually designed for each customer or each user type, with customer-specific messaging and promotional content added to maximize sales and customer service.

CSS impacts Revenue, Cost, and Capital as follows:

- Increases revenue opportunities through an expanded sales channel, expanded market, improved customer satisfaction – 10 to 20%
- Reduces costs through reduced reliance on call center resources, reduced order entry, reduced invoice costs – 20 to 50%
- Reduced errors in order processing – up to 90%
- Reduced Days Sales Outstanding (Accounts Receivables) – 5 to 10%

So What? *Customers are increasingly discriminating on how they work with their suppliers. In the customer-centric economy, where they have a multitude of options, the customer will require ease of "shopping" for products and services that meet their requirements. As well, in a global economy, this means 24 hours access, not only for shopping and ordering products – but also to track status. And, this experience, along with accuracy and quality of products received, will determine whether the customer "stays" as a customer for their next purchase. So, it impacts the bottom line AND the top line!*

Don't Automate a Mess! - Technology alone falls short!

IT spend provided little productivity gain in the 70s and 80s (from *Wired For Innovation*). This is primarily attributed to the failure to change processes, organizational structure, and enterprise-wide linkages…the failure to integrate and transform. Many companies "automated a mess"! In fact, General Motors spent $650M in the 80s, but had little quality or productivity improvement.

As companies increased their organizational capital (developed processes, people…), productivity increased dramatically. Where the physical capital of $1 produces $1 market value in companies that implement "islands of automation", the market value grows to $10 in companies that integrate the technologies, transform the processes, and develop their people. Thus, IT value is more than just computers, and software, and physical capital - it includes the organizational capital. In the US, the organizational capital (intangible) is estimated at >$1 Trillion – equivalent to the tangible assets.

So What?*- Don't just increase "feeds and speeds" or "automate individual processes". Wired For Innovation suggests that you need to go further than even these "islands" – and ensure that the entire business process is transformed for the evolving business model (and, presumably, aligned to the business objectives). Thus, Order-To-Cash, rather than just "automating order entry", etc.*

COMPANY Value Card – Customer Relationship Management

In competitive and volatile markets, maintaining strong customer relations is tantamount to continued success. Challenged to both sustain and expand the customer base, businesses need industry strength tools to acquire, service, and support their most important asset.

Increasing profits by improving customer acquisition and retention, Customer Relationship Management (CRM) provides a 360-degree view of your customer, integrating customer information at every touch point. A sound CRM strategy enables your business to be efficient, productive and responsive to the demands of your customers

CRM impacts Revenue, Cost, and Capital as follows:

- Increase sales productivity – 10 to 20%
- Increase customer contact time – 5 to 10%
- Increase attention to winnable opportunities – 5 to 10%
- Improve sales forecasting - 5 to 10%
- Lower costs while attracting and retaining customers – 10 to 20%
- Generate greater customer loyalty, satisfaction, response time – 5 to 10%
- Increase cross-sell and up-sell successes – 5 to 10%
- Improve customer responsiveness with access to relevant and timely data – 10 to 20%
- Reduce negative revenue campaigns – 1 to 5%

So What? *In a customer-centric business, it is essential to understand all aspects of your customers' requirements. This affords an opportunity to improve efficiency and effectiveness through the entire enterprise by understanding, and even predicting their demand, while also recognizing any negative factors that influence their decisions to "stay a customer". Generally, it costs 3 to 5 times more to find a new customer than to retain a customer. And, unless your business is driven by "infinite demand" -you'll always "value" existing customers.*

COMPANY Value Card – Trade Management

Competition for retail floor space is intense, making it extremely difficult for new or small manufacturers to compete with global manufacturers. Major retailers are using their tremendous buying and IT power to squeeze out higher margins and extract the maximum benefit from expected trade funds received.

To further complicate matters, the introduction of Sarbanes-Oxley regulations has placed even greater reporting and tracking requirements on all areas of the business, including pressure on the Sales and Finance areas to implement tighter control of Trade Management processes. These need to be automated, easily audited, and well documented.

COMPANY Trade Management (COMPANY TrM) allows manufacturers and distributors to more effectively plan, manage and track trade (promotional) spending activities. COMPANY TrM provides the information to analyze and monitor promotional programs, track revenue and costs, compare them to budget and last year, track sales by customers and products, plus process and track claims and rebates.

The following facts should be recognized, highlighting the significance of trade management:

- Trade promotion management is responsible for 20% of a company's profits and comprises as much as 70% of marketing budgets
- Trade funding ranks as the 2nd highest cost for manufacturers behind the cost of goods
- Estimated $8B wasted every year in deduction management across industries
- Deduction investigation costs $260 per event
- Deductions less than $1,000 usually not investigated --- automatically granted

TrM impacts Revenue, Cost, and Capital as follows:

- Effective planning and analysis can reduce trade spending without compromising returns – 10 to 30%
- Reduce payments to customers for invalid deduction claims - $000s
- Reduction in time required by Accounts Payable and Accounts Receivable personnel – 10 to 50%
- More accurate resolution of claims and deductions – 20 to 50%
- Reduce the number of outstanding claims and rebates – 20 to 50%
- Provide management with improved visibility into the level of promotional spend and exposure - $000s in additional revenue, reduced costs
- Shorten the promotional planning cycle – 10 to 30%
- Improve product pricing, invoicing, and accounting accuracy - $000s
- Create more accurate sales forecasts - $000s

So What? *Proactive selling of products through promotion is significant in some industries, especially retail, but is susceptible to risk. How effective are promotions and price strategies? How can trade spend be managed and/or reduced? How can you manage deductions against improper deduction claims? The "trade-off" is considerable expense to promote products vs. the opportunity to increase revenue and margin.*

Inventory Dynamics (Part 1) – Drivers of Inventory

Inventory is a necessary evil. It is used to buffer against imperfect supply and complex processes, while attempting to satisfy demand variability, unpredictability, and customer contractual requirements. For most businesses, the current level of inventory is excessive due to faulty planning, scheduling and execution, as well as life cycle effects (startup, obsolescence). Companies typically have 30 to 50% more inventory than is needed (target).

Inventory is usually the second or third largest asset, and is ripe for attention. The level of inventory is based on numerous variables, including level of service (LOS), categories of critical parts, variance of supply and demand, number of part numbers, volume of parts, leadtime, part costs, complexity of Bill of Materials (BOM), and number of stocking locations. A significant percent of the target inventory (70% or more) is determined during the design of the supply chain. Based on sources of supply, locations of customers, and contractual requirements, the supply chain's attributes of stocking levels, locations, replenishment policies, service levels, and part populations are defined. The remaining proportion of target inventory (up to 30%) results from variables of the suppliers, planners, distribution network, and other aspects of infrastructure during the implementation and execution of the supply chain. (See Inventory Dynamics (Part 2) - Cost of Inventory)

So What? *- The resultant investment is an expensive insurance policy against the business dynamics. While metrics such as Economic Value Added, Return On Assets, and Inventory Turns will motivate a business to reduce inventory, it must be done with a thorough understanding of what drives inventory, and how inventory affects the business results. Although it is good business to improve inventory turns and to reduce inventory dollars, there are various approaches. The dynamics of inventory must be understood when managing the level of investment. Otherwise, you may reduce the inventory on a part - and it's still not enough! (get the humor?)*

Inventory Dynamics (Part 2) – Cost of Inventory

Inventory $ indicates the level of investment, while the velocity of inventory, as measured by Inventory Turns (12 mos. COGS/Ave. Inventory $), indicates how effectively a company plans and executes its investment. In addition to the capital tied up, there are additional operating expenses (annual) to support the inventory – which are the inventory carrying costs. It is not unusual that a company may spend an additional 20-25% of the inventory investment in annual fixed and variable expenses, including:

- 6-10% = Opportunity Cost of Capital (the return if you used the money in other investments)
- 2-4% = Storage
- 1-2% = Handling
- 2-3% = Obsolescence
- 2-3% = Damage
- 1-3% = Administrative, 3rd party

- .5-1% = Loss (pilferage etc)
- 4-6% = Insurance
- 6-8% = Taxes

This does not include the impact of incorrect inventory – not having the right part at the right place at the right time. The ramifications can be premium costs due to expediting, scrap/rework, premium freight, or reduced customer service and damage to image, or even lost sales.

So What? *– Reducing inventory not only releases cash for other investments – it has a positive effect on Net Operating Profit. And, the methods used to optimize inventory will likely result in right part at right place at right time, which can lead to incremental sales and competitive advantage.*

Inventory Management for Retail

Consumers drive continual innovation, whether it is fashion, food, personal items, etc. This necessitates a high velocity in inventory turnover, less the inventory becomes obsolete. Whereas in some industries inventory is used for production of finished goods, and then service parts for repair, much of the retail inventory is consumed as finished goods. Initially, the inventory commands near list, or retail prices, but soon after, it is relegated to sales with heavy discounting. And, the less accurate you are with your forecast and buying – the more expensive it is in terms of excess.

So, what do you do? Run a sale, or avoid buying? The trade-offs seem to be “leaving profit on the table” or “missing a sale, thus losing the entire profit”. Rather than panicking, the following ten steps are rational approaches to managing the inventory:

1. Damn the river - Stop orders that are optional, and cutt out marginal items
2. Take it back - return unnecessary products to the supplier, although you’ll probably pay freight and maybe not get full credit
3. Accelerate charge backs for returned goods (defective merchandise, or substitutions not authorized)
4. Slash internal processing time – apply Lean
5. Sell to other retailers (overstock) outside of trade area - offer lower price, faster delivery
6. Pair up old and new (get old out at cost)
7. Move the merchandise based on traffic patterns. Move slow moving to most visited areas, and move high velocity to other areas. Check lighting and signage.
8. Pay incentives to staff (based on KPIs such as highest sales per...., largest increase...)
9. Move up mark downs right before sales peak (especially seasonal goods_) >30%
10. Make the most of tax deductions - if marked down a few times, donate for write-offs.

So What? *– Consumer goods are especially vulnerable to fast lifecycles and obsolescence. Whether your products are susceptible to fashion, technology, perish-ability, or other factors that impact the how long it remains desirable, it is critical to the bottom line that you manage the inventory.* It frees up cash, and saves carrying costs.

Varying Impact On Profit - Depends On Which Program

Business process projects impact one or multiple cost centers, and are generally projected as a % improvement. Those % projections, however, are on varying sizes of cost centers – different pieces of the “pie”. It can be misleading unless you recognize their actual contribution to the bottom line (and top line).

For example, a simplified company’s P&L may be represented as:

Revenue $100M

COGS $75M, of which Direct Labor $5M, Material $50M, Burden $20M

Gross Margin = $25M (or 25%)

SG&A $10M

R&D $10M

Net Profit (before Tax) = $5M

Also, if their Inventory Turns are 5, then they have an Inventory of $15M ($75/5); The inventory carrying costs annually would be $3M (if 20% carrying costs).

Now, in order to improve the bottom line by $1M, it would require:

- Increase Revenue by 4% (assume only COGS is variable; SG&A, R&D are fixed)
- Decrease Direct Labor by 20%
- Decrease Direct Materials by 2%
- Decrease Inventory 33%
- Decrease SG&A or R&D by 10%

However, rather than decrease these expenditures, some improvements in Selling or Design may actually drive much greater impact to the top and bottom lines. For example, since 75+% of the product cost is baked-in during design – there is an opportunity to have a great impact through effective design processes; Similarly, effective planning and other operational support can have a greater impact – than just cutting expense in those departments. *(See the Value-Pedia entry on “Where To Find Cost Drivers”)*

So What? *– Be careful when projecting % improvements in the respective projects. First, just cutting expenses will have varying impact on the top and bottom lines. Secondly, the drivers may be upstream or downstream from where you first look.*

Value of Enterprise Upgrade - Strategic, Tactical

Competitiveness in a demand driven business requires agility to respond to changing demand and supply signals, while adhering to internal and external stakeholder expectations. Global competition, political and economic volatility, regulation, technological advances, and sustainability are factors that increasingly affect a company's performance. It's resources, people, products, infrastructure, and systems must be positioned to meet this challenge.

A company's Enterprise Resource Planning system should be viewed as part of their strategy to compete. And, the job is not done when you finish the implementation. Training, performance monitoring, and institutionalizing and embracing the respective business processes are essential. As such, it is imperative to ensure that the system enables the business model as it evolves over time. This may include additional functionality and/or upgrading existing functionality.

The value created by upgrading the ERP system extends across the enterprise and to collaborative partner relationships throughout the supply and demand network. Implementing new core functionality helps support process improvements and enables current best business practices, as well as increased use of existing functionality. And, upgrading enables access to new software modules with which older versions may not be compatible.

Upgrading also supports business model evolution including globalization, mergers and acquisitions, reorganization, harmonization, governance and compliance, sustainability, and risk avoidance. Alternatives to upgrade include: Maintain current version, Perform a technical upgrade, Move to an Cloud SaaS model, Drive a full business process and technical upgrade, Do a complete re-implementation of an ERP system.

The Value of ERP Upgrade includes benefits in the following:

- **Strategic** – Most Current, Best Practices, Enable business changes and assimilation (M.A.D.)….
- **Business Model Re-Engineering** – Enable global planning, standardization, harmonize data….
- **Productivity** – Usability, integration, lean
- **Profit and Capital Optimization** – Reinvigorate usage, add functionality
- **Governance, Risk, Compliance, Sustainability** – Enable external expectations
- **Technology** – Infrastructure, customization, SOA.

So What? *– Upgrading ERP can enable assimilation of new businesses/products, optimization of supply chain delivery performance and working capital, streamlining of IT, achievement of sustainability goals, compliance to external expectations, as well as attainment of business goals. Rather than viewing the upgrading as a technical project, it should be viewed as a strategy for competitive advantage.*

Logistics Impact On Value

Logistic strategies are driven by customer requirements, product characteristics, participant locations, business model changes, and company business objectives. Consumer expectations are heightened through expanding alternatives for accelerated gratification, resulting in an evolution of Demand Driven Supply Networks where you "make what the customer wants, when they want it". Product evolution, from purely physical products, to physical, digital, and service components, result in a changing context for "logistics", including mode, timing, costs, etc. And, flexible business models for design, sourcing, production, final differentiation, distribution, and take-back or disposal have significant impact on how companies meet expected Service Level Agreements (SLA), compliance to regulation, and sustainability expectations. These trends will influence logistics requirements through reduced lead-times, increased status visibility, additional convenience throughout the order lifecycle, increased regulation, and products/services that meet the ever-increasing discrimination and expectations for uniqueness and quality.

Additionally, the growing recognition of a company's role in society, especially as it pertains to natural resources, will require further considerations as to the logistics factors. It is very possible that there will be alternatives that trade off lower material and labor costs vs. carbon emissions plus lead time, inventory, and transportation costs.

Since optimum logistics decisions are affected by the dynamics of factors such as raw materials, politics, economics, distance, lead-times, intellectual property, environmental impact, technological advances, compliance and regulatory requirements, business model morphing, etc., questions may be asked such as:

- Was our rush to source in China the correct move?
- How vertically integrated should I be?
- What determines whether to manufacture in the local markets?
- When should I use premium transportation services?
- Should I have an internal fleet vs. external transportation services?
- What is the true cost of customer rejections – and should I scavenge the returns?
- How strategic are logistics to my Competitive Advantage?

Understanding the influencing factors and having the agility to respond to the continuous and inevitable changes can ensure that logistics is a key enabler for competitive advantage.

So What? *– Ultimately, value will be judged by the customer, as well as other stakeholders (e.g. stockholders, employees, community, suppliers). Value, not just in products and services, but also in how you deliver to the customer. While logistics costs may range from 3-10% of revenue (best in class is about 3%, depending on the type of industry, of course!), the service provided may determine whether a customer remains a customer.*

COMPANY Value Card - Enterprise Asset Management (EAM)

Manufacturing companies are searching for ways to increase production output and improve product quality while reducing cost. A manufacturing company's most important assets are its manufacturing equipment, and the costs associated with managing and maintaining this equipment can be significant.

Enterprise Asset Management (EAM) is an integrated plant operation solution that enables companies to operate plants more smoothly by keeping equipment running and ensuring that a plat is consistently able to meet production requirements at the lowest cost possible. EAM manages assets from inception through operations and replacement.

EAM impacts Revenue, Cost, and Capital as follows:

- Reduction in Maintenance Expense 10% to 30% (Preventive vs. Reactive)
- Increase in Production Yield 3% to 5% (Uptime)
- Reduced Maintenance Downtime 20% to 40% (Preventive schedule, MR&O availability)
- Reduced Scrap / Rework 5% to 10% (Equipment performance)
- Reduction in Annual Purchases 5% to 15% (MR&O, Preventive schedule)
- Improved Labor Utilization 10% to 30% (Preventive schedule)
- Increased Equipment Service Life 2 years (Preventive)
- Optimized MRO inventory (MR&O Inventory Management)
- Reduced capital expenditure (Equipment Service Life)
- Increased revenue potential due to improved customer service (production predictability)

So What? *An ounce of prevention is worth a pound of cure!*

COMPANY Value Card – Transportation Management System (TMS)

COMPANY Transportation Management System (COMPANY TMS) is an integrated system that streamlines transportation processes, manages international trade and ensures global compliance. With an embedded workflow tool, organizations can easily control the flow of transactions for transportation, trade and compliance business processes from one system.

The solution provides global support by offering multi-carrier, multi-currency, and multi-language support for international operations.

The three components of COMPANY TMS — COMPANY Freight Management, COMPANY Global Trade Management and COMPANY Trade Compliance —all share the same database, rules, workflows, and user interface.

- **Freight Management** provides a transportation execution system that will automatically select the lowest cost carrier, consolidate loads, and provide carrier-approved labels and electronic manifesting for all modes of shipment, from parcel deliveries to ocean containers.

- **Global Trade Management** creates all of the international documentation required to execute import and export shipments, including the new e-reporting functions now required by the U.S. and European Union. It provides an option for attaching any electronic file to the documentation of any shipment and storing these documents for audit purposes.
- **Trade Compliance** ensures that shipments are not made to any individual, corporate entity, or country that has been listed by the various trade and customs agencies of the governments of the U.S., the European Union and the United Nations. It provides an audit trail of all activities relevant to compliance issues, and ensures that corporate policies and procedures are followed by all shippers, regardless of their location within the company.

TMS impacts Revenue, Cost, and Capital as follows:

- Reduction of Freight Costs by 1-10% (Consolidation, Carrier/mode selection, Negotiation)
- Reduction of carrier selection time 50-90% (automated routing guide)
- Reduction of shipment labor and cycle time 50-75% (documentation automation)
- Improved transit times (proper documentation)
- Improved customer service (entire customer experience)
- Avoidance of penalties, fines (compliance, customer service)

So What? *The job isn't done when the product is ready – you need to get it to the customer! In an increasingly complex global supply chain, TMS can meet the challenge of logistics and regulation requirements with a competitive advantage.*

COMPANY Value Card – Warehouse Management System (WMS)

COMPANY Warehouse Management System is a flexible, highly configurable warehouse management system that supports simple to complex warehousing operations in virtually any configuration.

COMPANY Warehouse Management System provides comprehensive coverage for various processes within a warehouse and is seamlessly integrated with COMPANY Enterprise Applications. In conjunction with COMPANY Enterprise Applications, COMPANY Warehouse Management System provides automated task management, RF based picking, wave management, batch picking, location find/audit, put-away, picking, cross docking, quality control, replenishment, transfers and advanced cycle counting activities. One central inventory repository between enterprise applications and warehouse management system provides non-redundant, highly accurate view of the resources within the logistics network. COMPANY Warehouse Management System provides full support for multiple domains allowing a single instance to cover multiple physical warehouses thus providing a global inventory overview.

WMS impacts Revenue, Cost, and Capital as follows:

- Improved inventory accuracy (up to 99.9%)
- Lower inventory levels (by 15 – 30%)
- Improved shipping Accuracy (up to 99.9%)
- Lower inventory search time (by 50-100%)
- Reduced labor costs (by 20-30%)
- Reduce or eliminate the need for physical inventory
- Reduce picking errors
- Eliminate charge-backs

So What? *Although Inventory is a necessary evil, if you need to store it – then make sure you are as efficient and responsive as possible.*

COMPANY Value Card – Supply Chain Portal

COMPANY Supply Chain Portal (COMPANY SCP) is an inventory visibility tool, provided on a hosted Internet site that allows customers and their authorized suppliers to share information about inventory, scheduling, purchase orders, shipments, Kanbans, invoices, bills of material and much more.

COMPANY SCP facilitates real-time communication across the entire supply chain by extracting key inventory information from enterprise applications and making it visible to suppliers via the Web. This secure solution provides more current information, is easier to use, and is more reliable than methods that depend on paper or e-mails.

This paperless collaboration allows suppliers to enter shipments and communicate electronically with the customer. Data can be imported, exported and received with or without EDI. COMPANY SCP offers everything suppliers need for shipment processing, including entering ASNs electronically, and printing bar code labels.

Integration to the COMPANY Transportation Management System (TMS) gives long-distance trading partners visibility into the location of their shipments while they are en route to their destination, and sends “alert” messages when milestones are met or shipments are late.

Additional features include invoice visibility, where suppliers can retrieve information about payments, vouchers and settlement arrangements, and a document management system integration that makes Bills of Materials (BOMs) and other documents accessible to authorized suppliers.

Supply Chain Portal impacts Revenue, Cost, and Capital as follows:

- Reduction in Inventory (Raw & WIP) 25 – 50%

- Reduction in material spend 2-5%
- Improved Buyer/Planner Productivity 5-30%
- Reduced administrative costs 5-50%
- Reduced downtime due to stockouts 25-90%
- Reduction in Premium Freight 15 - 60%
- Reduction in Expedites 10 - 70%
- Reduces Floor Space 20 - 60%

So What? *The suppliers are a virtual extension of operations, and will benefit greatly through collaboration as they are able to synchronize their supply networks with the demand triggers and production status, as well as product design and transportation. Almost as if they are within the four walls!*

Reverse Logistics Goldmine – planning for the return

One aspect of business that is significant in some industries is the planning and execution on returns - whether due to impulsive buying, incorrect shipments, quality issues, other terms, etc. Some businesses, where there is considerable impulse buying, may experience a high proportion of returns relative to sales (such as Brookstone, which has as much as 20%). In other businesses, such as industrial products, the returns may be scavenged for parts, which are put back into inventory and re-used at 35% of the cost of a new part. Also, companies have used incentives and promotions to move product, only to have the product returned – thus causing false demand signals on the supply network.

Reverse logistics comprises the planning as well as execution of returning product. Planning includes consideration of the returns and repair, where the finished goods may be further dis-assembled for scavenging of components, as part of an overall inventory strategy/plan. Execution, of course, would be the scheduling, documentation (return material authorization, commercial and legal documents), etc.

Reverse Logistics impacts Revenue, Cost, and Capital as follows:

- Cost of Goods – utilization of used parts at 35% of the cost of a new part
- Inventory – recognition of returned components, thus avoidance of stocking new components

So What? *Properly planning for returns can impact inventory levels, as well as Cost of Goods. As sustainability becomes highlighted, there is more of a focus on the disposition of returns (e.g. electronics, haz-mat, and/or where re-use is desirable due to costs). It is not just an economical decision – it is a practical decision in the spirit of reducing the carbon footprint.*

COMPANY Value Card - Service & Support Management

Comprehensive service and support strategies enable the ability to provide superior customer care after the sale, providing a key opportunity for businesses to differentiate themselves from the competition.

COMPANY Service and Support (COMPANY SSM) enables exceptional customer service and support. Designed to ensure customer satisfaction, COMPANY SSM resolves service calls, manages service queues, and organizes mobile field resources. Combined with extensive project management support, organizations can track materials and labor against warranty and service work, compare actual costs to budget, and generate appropriate invoicing.

COMPANY Service and Support functions include:

- COMPANY Service and Support Management coordinates all interactions related to the support, installation, maintenance and repair of products, to improve customer satisfaction levels, to grow revenue, and to better manage service costs
- COMPANY Mobile Field Service extends COMPANY Service and Support Management to mobile field service employees so they can receive assignments, record activities, capture proof of service and order parts from their handheld devices or laptops
- COMPANY Field Service Scheduler provides a graphical scheduling/dispatching tool for field service organizations to improve SLA compliance, better first time fix rates and reduce service costs by getting right people at the right place at the right time with right parts
- COMPANY Project Realization Management provides a sophisticated set of tools for creating detailed schedule plans with resource requirements

Service and Support impacts Revenue, Cost, and Capital as follows:

- Increased Customer Satisfaction 10-25%
- Improved service revenue 10-15%
- Reduced service operational costs 15-25%
- Warranty cost reduction 10-15%
- Improved workforce productivity 10-25%
- Reduced service inventory 5-20%
- Improved service scheduling productivity 50-75%
- Reduced mean time to repair 5-10%
- Improved first time fix rates 10-15%

So What? *Increasing pressures related with global competition, continue to push companies to differentiate themselves with the quality of their service operations in addition to the uniqueness of their products and their cost effectiveness. More and* *more businesses are looking at ways to increase revenues, profits and customer royalty not only by initial product sales but by after-sales service and support. And – service parts (as well as service labor) are profit generators!*

COMPANY Value Card – Business Intelligence

Business Intelligence (BI) is a practice and toolset that helps people make better decisions, beyond the use of specific applications for workflow and transaction processing. BI generally consists of:

- Data Warehousing & ELT (Extract Load Transform) tools
- Querying & Reporting Tools
- Dashboards and Metrics
- Portals and Alerts to manage access to and distribution of information

The general use of the term may vary, but BI provides the ability to analyze historical, current, and predictive aspects of performance. It is common to extract data from multiple systems, and to enable the user to "slice and dice" data (in many cases, the data is "near real-time") in relationship to various parameters, dimensions, and views (data, graphic). The data is maintained at a granular level and can be aggregated, then dis-aggregated for analysis – based on the user's investigative interests. The on-line analysis will typically obsolete many of the former static reports.

The value of BI is realized in efficiency and effectiveness:

Efficiency – provides an expedient approach to collecting data for analysis and business decisions. BI may obsolete the former tedious data extraction that users or IT developed (multiple static reports and Excel worksheets from multiple sources).

- Increased user productivity
- Reduced IT development and maintenance

Effectiveness – provides the ability to focus attention on the priorities that need attention. Similar to exception reports with MRP, the user can be directed to rules-based priorities – rather than need to manually winnow their way through piles of data. The value is in the business impact upstream and downstream, including examples such as:

- Increased sales due to recognition of sales trends, channel performance, promotion profitability, salesperson performance, etc.
- Reduced operational costs due to recognition of issues associated with personnel, suppliers, transportation modes/carriers, product quality, etc.

- Improved capital utilization due to inventory turns analysis at the SKU level, process equipment performance

Another important philosophy that is supported by BI is the understanding that people perform based on how they are motivated. BI provides a method to track performance of individuals, as well as educate them on how they impact the corporate business objectives. Incentive systems, performance reviews, and real-time updates provide a robust approach to this performance management.

So What? *What if someone gave you a phone book – but it wasn't in alphabetical order! At least, if it was in a database with easy access user interface – then I could make some sense out of it. Similarly, Business Intelligence is not just a fancy graphical way of collecting data. BI allows individuals to "mine" the relevant data about their respective challenges and responsibilities – in time to make a difference. It turns data into intelligence.*

COMPANY Usability – More than just efficiency

Business applications are enablers to the respective business processes. They provide simplification, automation, and enhance the ability of the users to be effective in their roles. Effective means doing the right thing at the right time!

The business environment confronts individuals with thousands of actions that need attention. Thousands of SKUs need ordering, managing, picking. Hundreds of inquiries need answers, and orders need entering, fulfilling. The optimum way to deal with this proliferation of tasks is by "exception" - which ones need attention first!

COMPANY's approach to Usability (.Net UI, Operational Metrics, Process Maps, Reporting Framework) is to enable the user to winnow to priorities through focused queries, alerts, workflow, etc. Time is precious, thus the user needs to ensure that they are working on the things that will impact Revenue, Cost, and Capital in alignment with the business goals.

So What? *- COMPANY Usability should not be thought of as just an efficiency tool. Not only can you do your work faster - you can do the RIGHT work faster!*

Usability – Getting at the Benefits

COMPANY Enterprise Applications are designed to be easy to use, quick to implement and intuitive for users to learn. The solution includes COMPANY's signature process maps, flexible workflows, metrics, flexible report framework, and automation – enabling the users to focus efforts based on priorities that align to the business objectives.

- .NET UI productivity through focused browses, configurable screens, flexible reporting framework
- COMPANY Reporting Framework – browse-based, customizable

- Metrics for optimizing implementation, data integrity, and performance management
- Process Maps for company specific business processes, navigation, training, document management
- Workflow for streamlined synchronization of the business processes

The Usability features have reduced the time spent retrieving, analyzing, and reporting by 50-75% for personnel in an analytical role (order commitment, schedule analysis, planning, etc.), and less if the person is heavy data-entry. A large COMPANY customer estimated a 2.5% productivity improvement (1/2 day per month) for all personnel.

However, as mentioned in *COMPANY Usability – More than just efficiency*, significant benefits beyond productivity are realized by focusing on Right opportunity, Right place, Right time:

- Increased Revenue – improved Customer Service, faster assimilation of new products, new markets
- Decreased Costs – improved productivity, and reduced waste, penalties, training, turnover, and material spend
- Optimized Capital Utilization – reduced inventory, improved cash efficiency, improved fixed capital utilization

So What? *Although a time study may be difficult, there is no doubt that the user productivity improves with COMPANY Usability. Even more difficult to prove, but intuitive, is the significant business benefit by enabling the personnel to winnow down to the absolute critical tasks. Efficiency may be worth $X, but Effectiveness is worth $10X!!*

Beyond ERP - Transforming With a Paradigm Shift

Companies have implemented and institutionalized the integrated processes of ERP, first as a main frame application, and in the late 20th Century – as a client-server approach. User interfaces, functionality, footprint of applications, infrastructure and technology have evolved along the way. And, the IT personnel requirements continued to try and keep pace. Of course, there have been numerous challenges such as cost overruns for implementation, delays, maintenance and support issues, difficulties in alignment to the business objectives and evolving business models, to mention a few. Even after initial implementation, companies continue to evolve their requirements due to changes in business processes, changes in financial management policies and practices, reorganization, M&A, regulatory requirements, etc. Add to this the fact that 80% (from a survey titled *The High Cost of Change for ERP: What Does It Cost to Keep Up to Date?* by CFO Publishing Corp.) of the companies have customized standard applications to meet their specific business requirements, there is understandably a concern about the complexity of sustaining the ERP solutions.

So, with this complexity, companies are considering how to best position their ERP approach for competitive advantage. A question that should be continually asked: *How do we change the paradigm on how to run our business?* This should include a drill down further to:

- Do we go vanilla?, Do we customize?
- Is my distinctive competency IT? And, even if I do some of the IT functions well – which ones could I easily outsource?
- Should new applications of ERP just mimic the old processes – or are there new ways of approaching each business process?

Regardless of conventional thinking, companies are embracing Software As A Service (such as COMPANY's Cloud) and user-configurable interfaces as a flexible approach to meeting the dynamic requirements of their business. Cloud offers a low cost of ownership, rapid implementation, high availability, and leading-edge expertise to fend off most of the challenges that confront the internal IT departments. This is a paradigm shift from *"IT must own the processes and keep the data behind our firewalls"* – to*"IT is an enabler of our business processes"*.

Another paradigm shift is in how the user approaches their work. A great example is, rather than duplicating custom reports and spreadsheets that were developed to fill a gap, a company can implement applications such as Business Intelligence (BI) and COMPANY's .Net UI/Usability features. They are replacing static reports with on-line analytics. The user can drill-down to the root causes of underperformance, and manage by exception. The user focuses on the things that need attention.

So What? *The business environment continues to accelerate in complexity. A rush to low cost approaches that appear to provide efficiencies may miss a much more significant opportunity to transform the way you do business. Rather than compromise how to run your business in this environment – embrace it with approaches that accommodate that complexity. Know your distinctive competencies and unique business requirements – then meet that challenge. It may require a paradigm shift from the old way of doing business.*

More on Transportation, Logistics Value

A recent Aberdeen Group article, *International Transportation: Optimize Cost and Service in a Global Market* provides a concise overview of Pressures, Metrics, and Actions from a survey of 181 respondents that included enterprises of all sizes, with global and domestic transportation. The companies were segmented as Best-In-Class (top 20%), Average, and Laggards (bottom 30%). We'll focus on the Best-In-Class.

Top pressures driving a focus on transportation management

- Cost and service impact on overall supply chain performance
- Government regulations (security, import/export, C-TPAT, customs compliance,...)

- Supply Chain volatility (shifts in leadtimes, inventory, volume by mode/lane)
- Increased customer demands (shorter cycle times, high on-time delivery performance)

Metrics of Best-In-Class

- Trans Spend/Sales - 2.38% (Average= 8.75%, Laggards=16.35%)
- Spend improvement – (-) 8.71% vs. previous year (Average= .97% increase, Laggards= 5.03% increase)
- On-Time and complete - 97.2% (Average= 94.7%, Laggard = 87.3%)
- 74% have visibility into local/global flows
- 39% respond in near real-time across multiple channels
- 2.5 times more likely to be able to optimize mode
- 1.91 times more likely to consolidate
- 56% transportation cost relative to supply chain costs

Actions

- Collaborate with internal and external groups to gain visibility and share the global inbound and outbound supply chain
- Leverage current and future technologies/tools to automate and streamline transportation and global trade management processes
- Employ near real-time dynamic optimization to enhance cost/service
- Renegotiate with carriers
- Rationalize number of trading partners
- Implement Event management to reroute, rebalance
- Increase B2B, EDI connectivity
- Fully integrate internally to other functions/systems
- Automate Global Trade Mgt Strategies

So What? *– COMPANY is positioned with TMS to meet the needs of customers striving for Best-In-Class. Reference the Aberdeen Group study further insight. Transportation is not only a sizeable cost, it is also a differentiator and can be a competitive advantage.*

Increasing revenue through COMPANY - New Customer

When assessing the value of COMPANY solutions, there is a temptation to focus on Cost reduction and Capital optimization, which is somewhat easy to defend and to quantify. Conversely, a projection of increased revenue requires confidence that a company will increase its competitiveness, perceived value, effectiveness in channels – or ensure that prospects/customers are aware of their offerings. However, even if it is difficult, revenue growth should still be recognized as Value.

A great example of potential revenue increase is a prospect that considered replacing legacy systems with COMPANY. They specifically wanted to:

- Improve systems, processes and people capabilities to continue to serve existing customers
- Expand in Automotive Sector
    - Geographic footprint expansion with existing customers (from local/regional supplier to global supplier)
    - Expand to new customers in this sector, including OEMs
    - Partner with customers for product innovation
- Expand to other sectors using experience in automotive best practices and systems as a competitive advantage
    - E.g. customers in durables sector that demand APQP, EDI, Lean

COMPANY offers solutions that enable best practices with best of breed systems for the automotive industry, providing a competitive advantage for winning new business in and outside the automotive industry. Also, our standard systems and processes enable customers to achieve expansion into new markets and geographies more easily. The key is that, by utilizing COMPANY's automotive experience and enablers, the customer is positioned to capture new business, resulting in increased revenue.

So What? *– Customers are driven to increase profitability and return on assets. Although revenue growth is difficult to project, any solution that positions the customer to be more competitive and knowledgeable about their markets should be assessed for its revenue impact. COMPANY isn't just about "wringing the cost out" – it's about competitive advantage, which may mean increased Sales! So, not just the bottom line, but also the top line.*

Reversing Outsourcing To China - Value Has Changed

Companies chased low labor and material costs around the world, with a significant transfer of manufacturing from North America to Asia. This was especially advantageous for products that had high labor composition, and were relatively high volume for each SKU. However, the results have not always been to their advantage, and in some cases, companies are reconsidering this strategy.

Factors to be considered

- Labor content of product cost
- Lead time requirements
- Weight and volume of products
- Product lifecycles
- Quality, Engineering requirements
- Intellectual capital, Security, Risk

Trends that impact outsourcing, off-shoring decisions

- Labor costs are increasing as developing countries seek a growing middle-class
- Focus on customer, demand-driven economy motivates manufacturing closer to consumption
- Higher value-add, engineered, and/or software and digital products require more developed support and manufacturing/transformation capabilities, as well as collaboration between engineering, suppliers, customers, and manufacturing
- Rapid lifecycles require reduced supply chain pipelines and inventory (risk of obsolescence)
- Some products benefit from Industrial Commons (consortium of industry and academia) such as Silicon Valley, electro-mechanical-engineering in Germany, drugs in Boston
- Transportation costs (up about 71% the past four years as a result of higher oil prices and cutbacks in ships and containers) and lead time requirements are motivating local manufacturing (to consumption)
- Political, economical, monetary fluctuations may change the direction of strategies

Examples of reversal

From USAToday (http://www.usatoday.com/money/economy/2010-08-06-manufacturing04_CV_N.htm) GE plans to make advanced products in the U.S., noting a 30% Chinese cost advantage likely has tilted to roughly a 6% U.S. edge when figuring lower inventory expenses and fewer delivery snafus.

Another scenario tested (my former consulting days with a Supply Chain Management consulting company) showed what appeared to be 11% product cost reduction, was actually 33% premium because of lost sales due to service issues, additional headcount for inspection, procurement, engineering, and premium freight (ocean, air...) and inventory.

So What? *– Strategic decisions are based on facts and expected trends, and should always be open to adjustments. Customers, products, external factors and company business objectives should drive sourcing decisions. The general trend to source in developing nations may make sense for high labor content, high volume products, and if those local economies can consume some of the products. However, as you move up the ladder in sophistication and customer differentiation – "a slow boat from China may NOT be the answer!"*

COMPANY Value Card - Logistics Accounting

COMPANY Logistics Accounting provides greater visibility and control over costs and payments to third-party suppliers providing transportation of goods received into, shipped from and moved between sites. These charges, such as freight and duty, are known as "logistics charges."

COMPANY Logistics Accounting supports the entry and tracking of all individual costs associated with the transportation of goods into and out of company sites. This includes Inbound Logistics Accounting to track inbound transportation costs, and Freight Accrual Accounting to track outbound transportation costs. Inbound transportation costs include third-party logistics charges for transporting items purchased from a supplier to a company location, and for shipments of items from a company location to a customer or another company location. COMPANY Logistics Accounting helps control a company's logistics costs and automates administration, for savings that go straight to the bottom line.

Logistics Accounting impacts Revenue, Cost, and Capital as follows:

- Improves efficiency through complete tracking, monitoring, accruing and invoicing all costs associated with freight – 10 to 20%
- Improves margin visibility by including all transportation-related expenses in standard cost of product, ensuring margin management and price management – 5 to 10%
- Improves planning and budgeting by providing planned vs. actual performance analysis of logistics providers – 20 to 25% efficiency
- Ensure accurate payments to carriers by matching freight accruals with invoices – 10 to 20% reduced freight costs

So What? *As transportation costs become an increasingly important factor in decisions on pricing, sourcing locations, and business model strategies, it is essential to understand the true impact to product and order margins. Rather than absorb transportation costs and "spread" them over all products like peanut butter, it is much more prudent to itemize them directly to the root causes and drivers.*

COMPANY Value Card – Enterprise Financials

COMPANY Enterprise Financials is a powerful and efficient financial solution providing the ability to manage and control businesses at a local, regional and global level, and supports multi-company, multi-currency, multi-language, multi-tax capabilities, as well as consolidated reporting.

COMPANY Enterprise Financials ensures regulatory, governmental and SOX/IFRS compliance. It provides flexible and robust reporting, giving decision makers multiple views of their company's financial position.

COMPANY Enterprise Financials is seamlessly integrated with the sales and distribution, planning, and manufacturing modules to report the financial implications of the company's activities.

Enterprise Financials impacts Revenue, Cost, and Capital as follows:

- Productivity associated with streamlined processes, faster closings, collaborative budgeting, regulatory compliance efficiency, ability to model scenarios, consolidation, shared services, etc.

- Improved capital flow in terms of Accounts Receivables (visibility, tighter controls)
- Faster revenue recognition

The quantification of benefits due to Enterprise Financials may be difficult, but there are obvious and intuitive business improvements.

So What? *As companies evolve globally, it is essential that their business systems support the assimilation of new business units, as well as disparate languages, currencies, country practices, etc.*

COMPANY Value Card – COMPANY SE on Oracle

COMPANY Enterprise Applications Standard Edition is the core COMPANY solutions suite. It includes Standard Financials, as well as a number of other key functional areas, such as Distribution (sales and purchasing elements), Manufacturing (including Kanban), Supply Chain, and Service and Support, among others. The applications available in Standard Edition are written in traditional procedural client-server Progress 4GL code. The .NET UI for these applications is rendered, and does not contain application code on the .NET client side. COMPANY SE is certified for use on both Progress and Oracle databases. The features and functionality of COMPANY SE are the same on both database types.

Although COMPANY offers SE on Progress database as a standard, customers who choose to run SE on Oracle typically do so to achieve the following business benefits:

- Customers already using Oracle databases for other business applications can maintain a single database skill set within their organization (no need to hire or train Progress DBAs in an otherwise Oracle-based company).

    - There are many third-party vendors who supply products for Oracle. There are far fewer third-party vendors for Progress. This means that customers have a wide variety (in price and features) of products available available for Oracle. Such products include data warehousing, reporting and business intelligence tools as well as system administration, customization and management tools. Customers already running other Oracle-based products or planning to implement them do not wish to incur the expense of replacing or eliminating them.
    - Experienced Oracle DBAs and developers are in greater demand and so are more abundant and available in the marketplace than are Progress personnel, so employee recruitment is easier and less costly for Oracle.
    - Most of the cost of ownership advantage that Progress enjoyed in the past was due to the lower salaries Progress DBAs commanded in the marketplace. This goes back to market demand for experienced DBAs, and this pay disparity remains today. If you look at cost of

ownership studies, the greatest disparity between Progrress and Oracle lay in the DBA salary. Recent cost studies by the Aberdeen group and others show there is now very little difference between Progress and Oracle in all other costs (licensing, tools, training, support, etc.).

- Oracle provides a more robust and detailed system management, tuning and troubleshooting tool set than does Progress which affords Oracle administrators greater opportunity to monitor and control their system.

So What? *With other Oracle-based products already planned or in use at their sites, customers are interested in COMPANY products which run on Oracle and also provide COMPANY's functionality, ease of use, fast implementation and low ROI. Customers can be assured that COMPANY SE contains the same features on Oracle as it does on Progress, that COMPANY continually designs and updates SE for optimal performance, and that purchase and license costs of COMPANY products are the same regardless if Oracle or Progress databases are used.*

Green Clouds - Topics on Sustainability, Cloud Technology, Future Trends

Evolving from physical to digital products

The trend for products to be more “knowledge-based”, as opposed to material based will have a direct impact on how a company develops, creates demand, and delivers, as well as its impact on the environment. Consider the example of buying Frank Sinatra’s Greatest Hits in CD format vs. downloading. The CD (traditional example) requires raw materials transformed and embedded with the music, with the respective processing equipment. Then the CD is packed in a cardboard and laminated cover, then wrapped, then bundled, then stored, then shipped, then stored several more times, and transported several more time, ultimately arriving at the retail store. And, don’t forget that the consumer needs to drive to the store to purchase it.

Now, compare that to the alternative of MP3 downloading. Other than creating the music initially, the music resides in its raw form (digital) until consumed. Then it is instantaneously distributed to point of consumption, thus bypassing most of the physical steps. The organizational impact will be significant, with increasing knowledge-based processes, and intangible assets. The once “friction-based” physical processes transforms to a digital, frictionless “no cost, not time” process.

So What? *- Well, where did the Supply Chain go? COMPANY's role evolves to more about managing information - and less about managing physical parts. Does ERP become IRP (Information Requirements Planning)?*

COMPANY Cloud -More than just another way to finance software

COMPANY Cloud (Cloud) is a COMPANY hosted software as a service (SaaS) approach which relieves IT management of uncertainty, risk, and often unpredictable expense associated with an expanded suite of mission-critical applications. Cloud provides COMPANY customers with infrastructure, operations, integration, and application management support alternatives.

The business case to justify utilizing an Cloud business model is best developed based on a thorough analysis of total cost of ownership as compared to the traditional On Premise approach. The total costs associated with an On Premise approach, when considering the supporting infrastructure and personnel (which can be 60% of the total costs of ownership), in addition to the perpetual license, maintenance, and implementation services, can be 30% higher to several times greater than the annual expense of Cloud! There are considerable efficiencies and economies of scale afforded the business through Cloud, which not only improves the bottom line and customer service, but also supports the company's "greening" or drive to sustainability.

Additionally, the Cloud benefits realized from increased availability, more rapid usability and assimilation of new businesses, and added functionality further impact the bottom line through increased revenue, further reduced costs, and higher return on assets. The business case for Cloud can be very lucrative!

So What? *– Do not shortchange the comparison of Cloud to On Premise. It isn't just another way of financing software. It also enables a company to focus on its core business, and provide a greater return to its stakeholders.*

Sustainability Overview - Green actually increases value

Sustainability is generally defined as, "The continued improvement of business operations to ensure long-term resource availability through environmental, socially sensitive, and transparent performance as it relates to consumers, business partners and the community." In addition, it should be recognized that sustainability must be accomplished in a manner that is positive to profitability, intangible assets, and risk.

When reviewing any company's website today, the words "green" and "sustainability" are prominent on their landing page. The extra regulations, process controls, and more expensive alternatives of sustainability or "green" initiatives would seem to be a burden on performance. However, evidence shows that these initiatives are not only having a positive effect on the bottom line, but are driving value in other ways, too.

There is substantial evidence that companies committed to sustainability outperformed industry averages by 15% over the six months from May through November 2008. From a market capitalization perspective, this superior performance averages out to $650 million in protected market capitalization per company."

A February 2008 survey of international business executives by The Economist Intelligence Unit Survey said that 57% of executives surveyed agree that the benefits of a corporate sustainability program outweigh the costs. It went on to say that companies who had effective programs were on average 16% more profitable than competitors and had a share price that averaged 45% higher. According to The Economist, implementation of green initiatives can have immediate, as well as long-term, benefits. The most frequently cited benefits that firms expect from sustainability policies relate to improved business results, including the ability to attract and retain customers (37% of respondents), improved shareholder value (34%) and increased profits (31%). Additional benefits include energy savings, productivity, building appreciation, and brand/product value (in the eyes of the customer).

In future Value-Pedia factoids – *Sustainability Lifecycle*, and *Sustainability Changes The Strategies* – we will discuss other aspects on the Value impact of going “Green”.

So What? *– Evidence suggests that the net effect of evolving to a sustainable enterprise and supply chain is positive for all stakeholders, especially as they evolve their definition of value. “Going green” is not just a slogan, or an obligation – it is a value creator!*

Sustainability Lifecycle - Impact across the organization

Striving for a sustainable enterprise and supply chain requires an understanding of the upstream and downstream factors that impact natural resources (e.g. air, water, non-renewable, soil, etc.). From a business perspective it includes how you create demand (customer, market), how you design (products, services), and how you deliver (transform and transport, as well as retirement). One company’s approach (Interface Carpet) was to establish initiatives based on:

1. Eliminate Waste – redesign to ensure elimination of waste (minimize or remanufacture)
2. Benign Emissions - Eliminate toxic substances from products, vehicles and facilities.
3. Renewable Energy - Operate facilities with renewable energy sources – solar, wind, landfill gas, biomass, geothermal, tidal and low impact/small scale hydroelectric or non-petroleum-based hydrogen.
4. Closing the Loop - Redesign processes and products to close the technical loop through re-use or keeping organic materials uncontaminated so they may be returned to their natural systems.
5. Resource-Efficient Transportation - Transport people and products efficiently to eliminate waste and emissions.
6. Sensitizing Stakeholders - Create a culture that uses sustainability principles to improve the lives and livelihoods of all of our stakeholders – employees, partners, suppliers, customers, investors and communities.
7. Redesign Commerce - Create a new business model that demonstrates and supports the value of sustainability-based commerce.

These initiatives ultimately can be measured by basic trends in electricity, oil, water, landfill, and pollution. While there may seem to be imposing challenges in re-designing product and processes to achieve a sustainable enterprise and supply chain, there are actually significant benefits:

- Reduced consumption of natural resources
- Reduced waste in process steps, time, incorrect actions, premium freight, penalties
- Reduced overall product and services costs, while meeting or exceeding customer requirements
- Increased Value from a customer perspective, especially ones that are focused on sustainability themselves (increase volume and/or price)
- Improved image with employees and community
- Improved return on assets due to reduced inventory, higher profits, and increased property values (green buildings command a premium)
- And more….

So What? *– The value of sustainability is maximized when you reach upstream to how the products, services, and demand are created, as well as downstream through delivery and retirement. Just as companies have realized value in "cleaning up their processes" when complying with Sarbanes Oxley, they are also realizing significant competitive advantage as they truly become green. Not just green on their website – but green in their blood!*

Design, Lean, and Sustainability

Competitive Advantage is gained through demand driven design and delivery while meeting or exceeding stakeholder expectations. Although this traditionally will be defined through financial, operational and supply chain metrics, there is an increasing expectation of compliance to regulatory requirements and community values. Design, Lean, and Sustainability initiatives are significant contributors to ensure alignment to these objectives.

Design for Manufacturability and Sustainability – As noted in D*esign Drives >75% of Product Costs* the design stage locks in a substantial portion of the downstream delivery requirements. Collaboration between Engineering, Procurement, Supply Chain, Finance, etc. can synchronize the customer's requirements for functionality, quality, service, and cost.

Lean practices will strive to reduce/eliminate all waste in terms of time, labor, material, purchased materials, etc. As product SKUs proliferate, there is incentive to standardize on base components and sub-assemblies, and delay differentiation (Postponement) until the final steps. This approach keeps the earlier stages generic and reduces the complexity that then drives inventory and overhead.

Sustainability also strives to reduce/eliminate all waste, with a recognition that natural capital is precious and must be weighed against labor, time, etc. This may seem like a subtle difference from Lean, but it emphasizes the need to understand the carbon footprint throughout the supply chain. Near net shape gains priority, even over postponement, as it minimizes the energy required to transform raw materials to finished parts.

So What? *The journey to Lean and Sustainability can be a slow sojourn unless you recognize that the origin is during design. Capture the customer requirements, and align your approach based on the company objectives and defined initiatives. Lean and Sustainability can be complimentary.*

Cloud Total Cost of Ownership – Infrastructure

As mentioned in the previous factoid *COMPANY Cloud -More than just another way to finance software*, it is imperative to include the infrastructure and personnel costs of supporting an application when comparing On Premise to Cloud. Infrastructure costs include:

- Servers, Networking
- 3rd Party Data Center
- Disaster Recovery, Redundancy Datacenters
- Network Connect
- Building Preparation

In cases where a company is currently using an On Premise approach, many of these costs will be "sunk costs" that may or may not support other applications. As such, it is important to consider whether they are fixed costs or variable costs. Will Cloud really reduce the building costs? How will the utilities be affected by moving the application off premise? Do the other applications still require some or all of the networking, datacenter, etc.? In cases where a company is starting from a "green field" approach, it is fair to recognize the total costs of establishing this infrastructure.

Another phenomenon to be recognized is the dramatic reduction in footprint and energy consumption of the latest technology. Servers that are only four years old may consume 8 times the wattage and six times the footprint of today's models. Thus, the new technology will have a direct impact on the infrastructure (data center footprint, utilities costs). This actually works in the favor of On Premise – especially as companies consider upgrading in addition to determining whether to go On Premise or Cloud.

So What? *Companies will start from various positions – current customers on current versions; current customers on older versions; new customers, etc. The comparison of On Premise to Cloud should shake out the "real" costs associated with each approach, subject to the company's starting point. In particular, the Infrastructure costs may be semi-fixed, AND the evolution of technology is reducing the impact of Infrastructure through smaller footprints and lower utility costs. On the other hand, as we'll see in other Cloud Total Cost of Ownership - Personnel, the total cost of ownership for On Premise is heavily impacted by personnel costs. The story is still very enticing for Cloud.*

Cloud Total Cost of Ownership – Personnel

As mentioned in the previous factoid *COMPANY Cloud -More than just another way to finance software*, it is imperative to include the infrastructure and personnel costs of supporting an application when comparing On Premise to Cloud. Personnel costs include:

- Management, Super Users, Business Analysts, Training
- Support 24/7 – Software, Hardware
- Turn Over premiums
- Customization, Integration, Harmonization, Consolidation
- Version control
- Availability, Roll-out

Personnel costs are always a sensitive issue when considering downsizing, elimination, etc. Many times it is more politically correct to refer to productivity gains or outsourcing as an opportunity to move those people affected into other, more value-added roles. On the other hand, many companies will not consider a productivity-related quantified "benefit" unless it results in elimination from the payroll.

When comparing On Premise to Cloud, some of the people may serve multiple roles across multiple applications (including non-COMPANY), thus may only have part of their responsibilities relieved. In those cases, it is correct to show "fractions of a full time equivalent (FTE)". Also, in this comparison, it is not necessary to show every role – especially if the role remains in either scenario. For determining a comparison of total cost of ownership, we are only striving to show the differences.

So What? *Whether personnel are eliminated or repositioned, there are true costs differences of On Premise vs. Cloud. Even though it may be a sensitive issue – make sure you fairly represent the different scenarios.*

Cloud – Business Benefits beyond TCO

As mentioned in the previous factoid *COMPANY Cloud -More than just another way to finance software*, Cloud benefits extend beyond the Total Cost of Ownership improvement (vs. On Premise). There are significant business benefits realized from increased availability, more rapid deployment and assimilation of new businesses, upgraded applications, improved usability features, and added functionality.

- Increased Availability - Cloud provides a 99.9% uptime SLA, which is considerably higher than many On Premise capabilities. Even when IT commits to "system availability" of 99+%, the end-user availability of the application may be significantly lower due to application maintenance and support availability. The impact on business can be (at best) reduced business efficiency – or worst, lost revenue/orders.
- Rapid Deployment - The Cloud application and resources include standardized functionality, templates, and process maps for rapid implementation. This not only reduces the cost of planning and executing

implementation, it also results in faster realization of business benefits (speed to benefits) associated with the application and faster assimilation of new businesses.

- Upgraded Applications - Valuing the business case for core ERP applications upgrades may be challenging. However, there are significant benefits due to reduced customizations, improved productivity, reinvigoration (usage) of current applications, risk reduction, and overall technology enhancement. (see factoid *Value of Enterprise Upgrade - Strategic, Tactical*)
- Improved Usability - Usability is all about winnowing from the many to the few in order to focus on the things that need focus. An analogy is the use of the MRP exception report (rather than review every part number in ascending order, the exceptions are prioritized automatically). COMPANY's usability enhancements provide efficiency, and also result in increased revenue opportunities, reduced costs, and optimized working capital and fixed assets. (see factoid *COMPANY Usability Benefits*)
- Added Functionality - Many times, when utilizing the latest COMPANY ERP application, other COMPANY applications are available also. Each one has associated business benefits that impact revenue, cost, and capital. Specifically, the impact may result as follows:
    - Revenue – Increase in volume, pricing, promotion, new product introduction, new business assimilation, etc.
    - Cost – Increased productivity, premium/penalty avoidance, waste reduction, freight spend reduction, inventory carrying costs reduction, distribution costs reduction, etc.
    - Capital – Inventory optimization, accounts receivables velocity, accounts payables velocity/supplier negotiation, fixed asset lifecycle enhancement and utilization, cash-to-cash cycle reduction, etc.

Beyond the aforementioned benefits, companies will consider Cloud inorder to access other applications, not available to them with traditional perpetual licenses/on premise. Literally, they can reach out globally to external data sources, applications throughout their supply chain, as well as tangential and complimentary services (e.g. marketing data such as IRI, Nielsen). Additionally, Cloud is seen as an opportunity to achieve compliance to industry standards that might not be affordable for a single company to achieve (e.g. HIPAA, ITAR, etc.), and for risk avoidance in cases where security requirements would be too costly for individual instances. World class Infrastructure Providers have economies of scale to ensure costly security measures.

So What? *Cloud is more than just a move from capital expenditures to an annual expenditure. It is also more than a reduction in internal IT expenditures. Cloud brings Value through enhanced systems capability to enable business processes that are essential for achieving corporate objectives.*

Green Clouds – A Double Entendre

It certainly isn't business as usual. During the 20th Century, companies conducted business in order to make a profit, and were fueled by resources as if inexhaustible. Oil, air, water, land, minerals – just get more in order to grow the business. However, there was a growing awareness along the way that these resources certainly weren't infinite, and the manner in which they were used not only consumed them, but created additional problems in the form of pollution and landfill. Thus, the campaigns AND change in the business model towards sustainability. The new mantra was Green.

Green has impact through the entire supply chain and lifecyle, including:

- Suppliers – are they providing a sustainable product (energy efficient, re-use of materials, non-pollutant, and recyclable and/or disposable in a sustainable fashion) – and did they use sustainable processes, materials (their own internal approach to supply, production, design, and transportation/packaging)? Are they providing digital or physical products and services?
- Internal – are the processes lean, energy and resource efficient, with proper handling of any offal, waste, returns, and end-of-life items? How much is handled digitally vs. physically?
- Customers – is the distribution, transportation, packaging, documentation, product dissemination, and product usage conducive to sustainable practices? Will the products be used by the customer with the same considerations as Internal and Suppliers? Are the products digital or physical?

Another change to the business model is considerable outsourcing of noncore functions – where it makes sense. Companies realize their distinctive competencies are around product development, or sales/marketing, or certain operations and supply chain functions, etc. Many of the support functions are up for grabs, including IT. Once they alleviate the fear of allowing their data beyond the firewalls, and in the hands of a 3rd party, all aspects of IT are candidates for outsourcing. Thus, the Cloud Computing approach to life!

We'll explore the definition of Cloud Computing in future factoids, but it is enabling companies to evolve from the On Premise inefficient architecture to a much more risk adverse, efficient approach of outsourcing to 3rd party experts. At the same time, a company is reducing its internal IT (applications, infrastructure, and personnel).

Cloud Computing includes:

- Storage-as-a-service (disk space Cloud)
- Database-as-a-service (leverage database technology, multitenant)
- Information-as-a-service (e.g. stock price information, address validation, credit reporting)

- Process-as-a-service (binds resources together such as services and data)
- Application-as-a-service (software-as-a-service such as Salesforce, Google Docs, Gmail, Google Calendar)
- Platform-as-a-service (application development, interface development, database development, storage, testing)
- Integration-as-a-service (interfacing with applications, semantic mediation, flow control, integration design – similar to Enterprise Application Integration EAI)
- Security-as-a-service, Management/governance-as-a-service, Testing-as-a-service – offers security, management and testing as outsourced services
- Infrastructure-as-a-service – (datacenter-as-a-service)

It is not unusual for a company to suffer from extreme underutilization of its hardware (<10% in many cases), which necessitates excess capital expenditure, and the associated electricity for power and cooling, as well as the added datacenter footprint. By outsourcing, this excess is dramatically reduced through more efficient approaches by the 3rd party experts (optimization of the infrastructure through Virtualization, Load Balancing, and various Offload techniques, as well as multitenant efficiencies). Additionally, the personnel to support are better balanced. Other advantages include faster deployment, higher availability, current/best in breed applications and technology, risk reduction – and more.

Future factoids will explore how Value is created through sustainability (Green) and cloud computing. The reason these are discussed together in this factoid is due to their prominence. While automation, cellular manufacturing, ERP, internet, and mobile communications drove changes in the late 20th Century – sustainability and cloud computing are drivers of the early 21st century. Check out companies' websites and the periodicals!

So What? *The movement towards Green and Cloud Computing are complimentary in many ways. They are strategies that drive towards competitive advantage, and they drive profitability to the bottom line. And thus a double entendre. Green Clouds – sustainable and cloud computing, AND very profitable!*

Sustainability at COMPANY - Internal and External positioning

COMPANY will increasingly be asked to provide guidance and solutions on aspects of sustainability. Certainly our products will enable our customers to operate in a more carbon neutral or green approach as we help them eliminate waste throughout their processes. Also our methods of communicating and delivering product will demonstrate leading edge methods.

As well, COMPANY's participation with its suppliers, as well as internal activities can demonstrate sustainable practices. Examples might include:

Suppliers

- Are the supplied products produced in a sustainable method? (e.g. is the manufacturing process efficient?)
- Do the products enable sustainable practices at COMPANY (e.g. are the servers efficient? Are they recyclable?)
- Are the products delivered efficiently (transportation?); Are there digital alternatives?
- Is the documentation on-line and/or embedded?
- Is the communication with the supplier collaborative and electronic?, etc.

Internal to COMPANY

- Are our office practices efficient and carbon neutral (Do we need hard copies? How do we dispose of waste?)
- Are we telecommuting, home office, car pooling where applicable?
- Are our business applications in the clouds (e.g. Concur, Share Point) and supportive of lean practices?, etc.

Customer

- How we deliver our product to the customer (digital download, Cloud, SCP)
- Enabling of Lean practices (minimize waste in their operations, manage disposal/returns, monitor/measure…..), etc.

So What? *– In many ways COMPANY is leading the way in sustainable methods. A large % of personnel work from home; our products are delivered digitally or in the clouds; our solutions drive lean practices; the servers that we use and recommend are increasingly efficient (electricity, cooling, and processing capacity). The Value of a Green COMPANY is subject to which stakeholder – but, regardless, it carries a lot of weight! Maybe the competition will be "green" with envy!*

Green Cloud Factors (Part 2) – Trend in Hardware

Headline: *Startup SeaMicro is unveiling its SM10000 server, which takes advantage of the small and highly energy-efficient Intel Atom processors and its own I/O virtualization technology to create a computing architecture that is highly scalable and drives down server power and space costs by as much as 75 percent over traditional systems. The SeaMicro server is aimed at Internet companies and HPC organizations. SeaMicro officials saw that the highly power-efficient chips could be used in servers targeting the burgeoning cloud computing and Internet workloads.*

This suggests virtualization in the hardware (rather than software, middleware), and even VMWare (virtualization king!) is suggesting that current approaches in software virtualization will be obsolete as technology advances. The advantages are numerous, including the ability to reduce energy consumption and floorspace in datacenters, and even enabling datacenter locations with less reliance on “energy generation centers such as rivers, etc.”.

So What? – *Enabling datacenters with technology that consumes significantly less energy and floorspace is directly supportive of sustainability initiatives, as well as empowering cloud providers, whether it is Software-As-A-Service, Platform-As-A-Service, etc. Of course, the hardware trends are also lessening the load on internal, On Premise approaches as well. However, whether a company “stays internal”, moves into the clouds, or drives their business with a “hybrid” – everyone benefits.*

COMPANY Cloud – New Customers

COMPANY’s Cloud reduces Total Cost of Ownership vs. On Premise, as already presented in previous factoids. The reduction of infrastructure (hardware, backup, data center, utilities, failover, disaster recovery, 3rd party, etc) and personnel (sys. admin, db abmin, support, management, disaster recovery, implementation, 3rd party, etc), and the trade-off of capital and maintenance with an annual fee (Cloud) can be significant.

Additionally, there are Cloud business benefits associated with uptime, faster implementation, value of the upgraded functionality, risk reduction (SLA, penalties, loss of business, volume fluctuations), preservation of Capital (use for other revenue generation, cost reduction, capital optimization), infrastructure optimization (enables COMPANY’s lower Cloud fees), and agility (scaling, business assimilation, business model changes).

In addition, new customer benefit from COMPANY’s core functionality vs. the competitors:

- Reduced Total Cost of Ownership for COMPANY vs Competitors – as demonstrated in the Aberdeen study that shows COMPANY’s total cost of ownership (license, services, maintenance) was 24% lower than Mid-Size ERP average
- COMPANY Core Benefits – as demonstrated in the Aberdeen study that shows COMPANY’s cost per % of improvement (inventory, operational costs, OTP, manufacturing schedule compliance) was 19% lower than the Mid-Size ERP average.
- Additional functionality (e.g. Demand Management, Supply Chain Portal, Transportation Management, etc) impact on Revenue, Cost, and Capital

So What? – *Don’t shortchange the business case of COMPANY On-Demand vs. the competitors. Start with the advantages of COMPANY as a solution provider to manufacturers. Rich functionality, rapid implementation and realization of benefits resulting in the lowest total cost of ownership and greatest benefits for the money. Then add the even greater advantages of Cloud, and you have competitive advantage!*

COMPANY Value in 2020 (Part 1)

Let's imagine the world in 2020 – a little "20-20" vision of 2020. The good news is that Moore's Law continues (theory is that Moore's Law will end by mid century due to limitations beyond "chip on an atom"!). The productivity gains enable Western World's continuing journey to Nirvana, while it uplifts the BRIC and developing worlds. Although the overall population growth has slowed (8 billion), there's an explosion in population that has reached the Middle Class status, with all the resulting consumption (and, unfortunately, the Big Macs around the waist!).

The world demographic (higher % that are consuming goods from beyond their local community) has motivated efforts to balance the resource consumption (renewable and non-renewable) that fuels the economy. Advances in material science, nanotechnology, advanced manufacturing, and genetic engineering have stimulated creative and highly productive approaches to product development and production. Changes (from 2013) include:

Consumer – Mass-customization of personalized products, directly marketed to the individual. "Products" evolving to digital and virtual experiences, and less about physical commodities. Device orientation gives-way to embedded capabilities ("chips" everywhere!) and living in the "clouds" (SaaS, satellite rather than hardwired). Greater proportion of budget for entertainment and fulfillment, while physiological needs are met with convenience, automation, and shrinking costs.

- 8 Billion population, with expansion of the middle class to 3.5 Billion (7 Billion population, 2 Billion middle class in 2013)
- Middle Class Budget - Entertainment, Apparel at 25-35% of budget (currently 20%); Housing, Transportation, Food at 35-45% of budget (currently 60%); Insurance, Healthcare at 20-40% of budget (currently 20%)
- Middle Class Taxes – Income, Sales, Capital gains, etc. consume a higher % of income, with additional taxation throughout the supply chain of goods buried in the price of goods – resulting in less than 50% of income available for goods, but an increase in the "safety net" for healthcare, unemployment, retirement, and infrastructure funding
- Products are driven by the subject matter experts (e.g. Apple, Google, Facebook, …) – as people continue to "not know what they want – and must be told"

Automotive – Global production of 125 Million cars, with 50% alternative fuels (hybrid, electric, fuel cell, etc.) and 50% traditional internal combustion

- 2 Billion cars on the roads
- Average age of car 13 years, 70 miles per gallon (equivalent for alternative fuels)
- Multi-use leases – trade vehicles during the week for commuting, recreation, etc.

- Extremely smart – design structure, sensors, and gps control, minimizing accidents and maximizing economies
- Production processes enabling distributed design and production near consumption
- High growth in China, India, Indonesia, North and Western Africa, Brazil, and Mexico

Other Industries in Part 2, 3… of COMPANY Value in 2020

So What? *The approaches to manufacturing, supply chain, deployment methods, planning, business intelligence, etc. (all of the COMPANY-world) will continue to reshape in an increasingly knowledge and information-driven economy, and less of a physical product-driven economy. The technological advances will out-pace the consumer's ability to grasp the possibilities, requiring leading politicians (legislative and judicial) and business to provide guidance. As Henry Ford said "If I asked the customer what they wanted, they would have said a faster horse!"*

COMPANY Value in 2020 (Part 2)

The advances in material science, nanotechnology, advanced manufacturing, and genetic engineering have impacted all aspects of the supply chain, from consumer through consumer goods, to industrial and supply processes, and ultimately to the base resources. Of special note, is the continued evolution from supply-driven to demand-driven resourcing. However, a notable trend is the product development direction, which is now driven by innovation genius of the "providers" rather than by the supposed "desire of the consumer". As Steve Jobs (Apple) once said, "*You can't just ask customers what they want and then try to give that to them. By the time you get it built, they'll want something new.*" To continue with view from 2020:

Consumer Goods – Expectations for immediate availability of customized products is enabled by flexible production and supply techniques, including near-net shape manufacturing, 3-D printing, intelligent flexible processes, sourcing and production near point of use, and smart packaging. Characteristics include:

- Smart devices for multi-use
- Services rather than commodities
- Personalization (marketing and products)
- Lease rather than buy
- Earth-friendly materials, re-use, and disposal

Healthcare – Globalization and urbanization amplify human contact, and longevity extends the exposure period in which the many diseases, physical erosion, and mental health deterioration can take their toll. The countering forces of preventive measures, rapid and early diagnosis, non-invasive remedies, and self-directed termination provide a balance to the resource constraints:

- Preventive consciousness, focused on balanced dietary decisions

- Regulatory requirements that both impede progress and protect the consumer
- Self-monitoring MRI and "Star Trek type tricorder" devices for early detection and monitoring
- Non-invasive procedures that minimize the need to "cut"
- Merging of biological, electro-mechanical, and nanotechnology – providing enhanced and/or replacement body organs and parts
- "Cost-benefit" analysis challenges the doctors "Hippocratic oath"

Other Industries in Part 4… of COMPANY Value in 2020

So What? *The expanding middle class and increasing life expectancy, in addition to the desire for individualized products, drives requirements for agility and flexibility on our production and supply chain. The consumer has an expectation of "I want what I want when I want it!" This will be tested when the consumer says "I want to die!"*

COMPANY Value in 2020 (Part 3)

The Industrial and Electronics Industries are two or more steps in the supply chain away from the ultimate consumer. They provide the things that design, make, and move consumer goods. These companies are influenced by the evolution to digital and virtual products (from physical). The accelerating pace of change in consumer products thus puts a continual pressure on these companies to evolve their materials, processes, delivery systems, and disposal.

- **Materials** – As products evolve to near-net-shape, 3-D printing, digital, and nanotechnology, the processes evolve as well. Similarly, as we evolved from wood to steel to plastic. Still, the equipment must be produced.
- **Process** – Sustainability and mass customization drive innovations in how energy and resources are consumed and disposed. Rather than top-down shaping transformation, we approach near-net shape manufacturing and 3-D printing for physical products. Even better, the digital and virtual products minimize process and supply chain requirements.
- **Delivery** – Moving products is also influenced by sustainability, mass customization, and the evolution from physical to digital products. And, an additional influence is the ability of the physical products to be developed and produced near consumption points. The resultant distance and time between production and consumption are minimized, reducing the cost of supply chain and impact on the earth. In fact, the resultant supply chains are actually supply webs, indicating multiple sourcing strategies for added flexibility.

So What? *While the products may look different in 2020, there will continue to be a requirement for knowledge and systems that connect demand to supply. The significant difference from today is that the buffers of time will shrink to almost* *instantaneous, and the movement of physical products will be increasingly complimented by the movement of information. Companies will increasingly be measured by their innovation, agility, and responsiveness, - but how will they "cost" their products? (See Part 4)"*

COMPANY Value in 2020 (Part 4)

The organizational structure of a company in 2020 is still comprised of the basic Profit & Loss Statement and Balance Sheet elements, including revenue, cost of goods sold, other operating costs, SG&A, IT, R&D, accounts receivables, inventory, accounts payables, cash, fixed assets, etc. However, the challenge in "pricing" their products, whether physical, services, or digital is to understand the "cost behavior". Traditional approaches to cost plus profit pricing, or even most market-driven pricing were premised on marginal costs – each new unit sold created some incremental new cost. However, in the day of digital products that are primarily the offering of intellectual property – there is essentially no marginal cost. Trends include:

- **Product Sourcing** – Physical products and services are managed through a complex supply networks (supply web) including outsourcing. Digital products are similarly sourced.
- **Direct Labor** – Minimal since there is very little labor that directly paces output. Most transformation processes are near- net shape, outsourced, information based – or the products are actually services or digital products.
- **Material, Inventory** – Physical materials have minimal waste, since they are near-net shaped or 3D printing. Again, as products evolve from physical to digital, the concept of materials and inventory change – at least in terms of direct materials in cost of goods sold, and inventory. This is countered by the outsourcing of products and services, which results in a cost buildup of sourced "components and services"
- **Overhead, Assets** – A significant shift towards supporting functions, infrastructure, and fixed assets replaces the direct cost elements (direct labor, material). This is countered by the outsourcing

So What? *The value of goods and services must be determined from the customer's viewpoint. What are they willing to "give up" in order to acquire your offering? Conversely, a company must establish its products, services, infrastructure and personnel in such a way that it continues to generate returns and value to its stakeholders. The challenge is that the value is increasingly the intellectual capital – not the physical capital. So, how will we value intellectual capital? Perhaps James Bond said it best. When asked "What do you know about gold?", he responded "I know it when I see it."*

Mid-21st Century

The only way to imagine life in the mid-21st Century is to take a leap through one or many disruptive changes. The customer/consumer drives demand through immediate awareness and ability to trade-off the utility/value of "products" vs. price. In a world where the marginal cost has been diminished (driven towards $0) since there is relatively little non rival (competitive trade-offs) factors (e.g. my having something doesn't diminish you from having it) - our traditional way of Pricing and Value has changed. Still, the consumer establishes the value, and ultimately the price - through market forces - but it is not related to costs. It is less about physical, and more about digital and service methods for providing value add utility in order to serve the ultimate purpose.

- Purpose= desired result
- Physical = discrete, material substance that provides utility to consumer
- Service = non-physical product/offering that provides utility to consumer
- Digital = electronic 1, 0s
- Value add utility = total satisfaction received from consuming a good or service

Now, if your 1985 self was transported to 2000, and then to 2015 - you would find a world of new language, new lifestyle - and realize that we are evolving from a world of physical products.. to a world of service and purpose, life experiences that assist in climbing Maslow's hierarchy of needs. You only need to look at how music evolves from vinyl, to CD, to MP3 in order to understand the impact to methods of acquisition, supply chain, scope of access, etc. But how do we then extend or extrapolate to life in the mid-21st Century?

- Maslow hierarchy of needs = stages of need that motivate people to ascend from physiological, to safety, to love/belonging, to esteem, and self-actualization. Generally, as the basic (lower levels) are met at an accelerated (and less costly) pace, people can aspire up through the higher levels.

Let's take a single product today, translate to what value add utility is provided, (purpose it provides). Then we will project the evolution to something with diminished marginal cost, while meeting/exceeding the consumer need. An <u>industrial pump</u> can be viewed as a commodity, discrete product with high marginal cost, and an obvious purpose. But that purpose is based on yesterday and today's "utility" and value. That doesn't necessarily mean it will continue to provide the same utility and value in the future.

So, what is the Purpose of the industrial pump? Simply, it transports liquid primarily to move from one location to another, and sometimes provides a change in pressure for utility (high pressure cleaning). A pump is typically complemented by piping, valves/regulators, bedding, gauge/monitoring, filtering, etc. in order to further control and monitor the flow of the liquid.

But, why does liquid need transporting? - And why do we need liquid? Liquid can be water, chemical, petroleum - and other derivatives. So, what if water was available locally (at point of usage), chemicals in general were diminished (everything liquid is considered a chemical) or locally created, and petroleum (for heating, transportation, plastics) was essentially eliminated through substitution?

Even in a growing middle class and transition of the developing nations into "developed" nations, as the world population stabilizes through controlled reproduction, higher standard of living (inverse to size of families) - the lifestyles, technology (local production), etc. have caused a noticeable trend in reduction of "pumped volume" requirements (1). The pump customers (industry) have moved locally (to consumption), transitioned their products to digital/non-liquid), and/or reduced capital investments in favor of expenditures/services. So, customers have reduced their desire to "own pumps", and their need to pump liquids. At minimum, rather than own a pump - they just want to move the "diminishing volumes" of liquid over a shorter distance (local).

Seeing the handwriting on the wall, pump companies have morphed to, first, liquid transportation services (pumps, trucks, tankers...) provided volume/sec flow rather than physical pumps/piping, and, thus, evolved their monitoring, systemization, quality..., project management...; secondly, due to the total reduction in liquid transportation needs, they further evolve their mission of liquid transportation...to.....engineering of substitution (reduce the distance, help make more local) and/or morphed to transportation of physical and digital items. Thus, you might see a Pump manufacturer merging with an engineering firm, a manufacturer/provider of solar panels, desalination equipment, batteries, material handling, or a commercial fleet company, FedEx/UPS, IT services, data farms, communications, etc.....

So What? *In a world that no longer needs your product - change to the new demand! Evolve your mission to a broader, forward-thinking statement that allows flexibility to morph as needed - with recognition that we are transitioning from physical to digital and service, and from long distance to local, while ascending the latter of Masolow's Hierarchy of needs.*

Robot Effect

The increasing risk of technological unemployment and the resultant growing inequalities is a vast, and sensitive subject. Our ability to replace manual, routine, repetitive jobs with automation initially was countered by new opportunities to utilize that labor, which were higher paying and a reasonably short transition. Just look at how the farmers were assimilated into industrial jobs that supported the automation and yield-multiplying breakthroughs. Those workers were able to rise in economic stature and ascend Maslow's Hierarchy of needs.

Today, however, the level of automation is pushing people towards opportunities that are either beyond their capabilities – or take too long to learn, thus missing the chance before it is obsolete again! As robotics, AI, and automation reach further beyond the physical, repetitive, algorithmic tasks – to the more cerebral, heuristic types of roles – the human will be challenged by longer cycles of re-training, or even be discounted due to inabilities to achieve the required skills. The question – will there be enough "low-medium skilled" roles, or will the "unemployable" rise?

Certainly demographics, social positioning, innovation, human requirements, etc. will all need to be factored into this discussion. Other topics:

- Increasing inequalities reduces net demand – as the growing rich class save, and the shrinking poor class consume
- Population growth is necessary to grow consumption (robots don't get haircut, nor drive cars (well they do - kinda!))!
- Consideration of basic wage, to offset longer "re-training" cycles, as well as reduce welfare programs
- Replacing "work" as you ascend Maslow's Hierarchy of needs (retired people, open sourced workers, etc find vocation without the need for financial rewards)
- Ascension from algorithmic to heuristic types of roles require different motivation, compensation
- 1 robot replaces 3-12 people, but the externalities must be considered (e.g. robot programming, repair, design, implementation… Vs. worker food, clothing, transportation to work, insurance, vacation, net waste due to quality….)
- Computer plus human > computer alone, or human alone (ala Gary Kasparov's chess challenge)
- Programs, education, etc. must be geared towards the new skills needed – more STEM, STEAM, and less rote memory
- Geography may play a role in seeking opportunities, but the ability to work remotely, individually may counter that trend

So What? *Robots evolved because humans wanted to reach higher on Maslow's Hierarchy of Needs. We're getting there – now what??*

Back To The Farm

The Industrial Revolution (as well as a few other innovations such as the printing press) extended the radius of influence for a family, such that they no longer needed to be self-sufficient. Long story, short – the various layers of Maslow's hierarchy of needs could be satisfied by extensions to an individual's life, with much of it disconnected in terms of relationships, locations. Rather than providing the goods and services within the family unit (or close-by community), commerce enabled the acquisition from remote entities (e.g. factories, department stores, other countries) using sources of income also from a distance. A family's world grew from a few miles (assuming they formerly traveled occasionally to a general store or church) – to hundreds or thousands of miles.

However, with the advent of the Information Revolution including the internet, social media, and a shake-up in the Supply Chain – are we contracting that radius? If I shop from home (Amazon), do online banking, work from home, do my socializing (Facebook, Match.com) online, get my news online sources, go to online school (MOOC – massive open online courses)….- at least my physical radius is shrinking. Add to it digitization of everything, 3D printing, prosumer products/services, reduced consumption (because I'm not going anywhere, so I don't need a lot of clothes, a car….) – suddenly, my family isn't physically leaving the county or parish! We are staying on the farm.

So What? *There's an irony in the "flattening of the world" (Thomas L. Friedman) and the discussions on free trade, globalization, income disparity, sustainability, etc. Perhaps it is a prelude to everyone having the means to satisfy their own needs - the ultimate "leveling of the playing field".*

Yes, Mr. Gordon, Our Productivity Is Still Increasing

I've heard Robert Gordon's challenge on whether we are at the end of productivity and innovation. He suggests that there has always been the hidden economy that isn't measured by GNP (so it isn't just true for Wikipedia, open source, etc.), and that better cell phones are not equated to the disruptions such as "electrification" or combustion engine. I feel he's missed the significance of the new disruptions.

I look at my life with my iPhone vs. 27 years ago. A Day In The Life of Eric Frantz in 1990 vs. An Hour In The Life of Eric Frantz in 2017!!

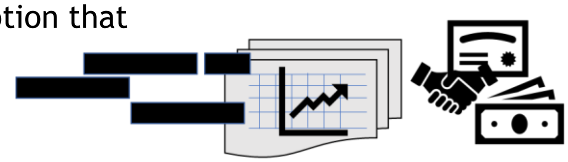
My Life in 1990:

- Banking - drive to the bank
- News - drive to the newstand, or wait for a few hours of news on TV
- Movie - drive to the theater
- TV - watch as broadcast-ed, and miss if it doesn't fit my schedule
- Vacation - drive to AAA
- Health - rely on periodic visits to the doctor
- Music - drive to the music store Peaches
- Books - drive to B&N
- Research - drive to the library
- Presentation - develop slides, print them on foils, re-print to correct problems,... only to present an out-dated and error-prone presentation
- Present to customer - drive, fly - stay in hotel, ...
- Communicate with a friend - call on the phone, go to voice-mail, wait for their return call OR write a letter, drive to the post office, mail it - get a reply in a week or two
- Communicate with business peer - same, but have a couple of administrative assistants in the middle (probably called secretaries back then!)
- etc. (this is a quick list by just looking at my apps on my iPhone, and a few on Office 365)

So What? *So, a message to Mr. Gordon: What took me hours to drive/fly, and reliance on my schedule meeting everyone else's schedule, and getting less quality results - I can now accomplish in 90% less time (my estimate), with greater relevance and accuracy and quality and....???*

Maybe I'll use my car less, so our auto industry productivity will suffer? I, for one, am optimistic about increasingly greater productivity gains in the future. And, we are on the low end of the exponential curve in innovation.

Connecting Behavior to Results



You sell a project to improve business with an assumption that you'll achieve specified outcomes. However, the deployment team is incentivized to implement on-time and on-budget. What's wrong with this picture?

People will do as they are measured. If you pay a line worker based on piece-rate, they will produce pieces – even if you can't sell all of them. If you measure an insurance claims office based on number of claims settled per person per day, there is likely a temptation to close claims expediently, at the sacrifice of thoroughness. You get the picture? You need to measure the right things to get the right results.

This goes for your mega-investment in the digital age. If the intent is to increase inventory turns or decrease claims payouts, then you must set those expectations.

The entire team needs to be in-synch, and rewarded to achieve the desired behavior. Try setting their bonus criteria, in part, based on meeting the outcomes. One of their MBOs (Management by Objectives) can be related to how well their projects achieved the expected metrics. Or, you can acknowledge the team through case studies, awards, or other methods that might meet their personal needs. Recognition of the ultimate purpose of the project will encourage all participants to not only be on-time and on-budget, but also On-Value.

Realizing Benefits – The Only Finger Pointing is Thumbs Up!

Have you ever purchased stock in your 401K account, but never monitored its performance afterwards? Not Likely! You certainly want to see where your hard-earned money is giving you a return. Well, that scenario is analogous to a company methodically developing its business case for investment, without ever monitoring the project outcomes.

Achieving value from your investment is the ultimate objective, therefore it is imperative to verify the results. Although companies may suggest that it is "hard to realize the benefits", as noted and refuted in Jack M. Keen's Exhibit 17.1 of *Making Technology Investments Profitable*[1], those are excuses and finger pointing while not doing their due diligence when spending their stakeholders' money. Rather, they should strive to continuously audit the results because it can provide insight on whether things are on track, whether they may have erred on their assumptions, and/or whether there are newly discovered opportunities. So, what techniques can be used?

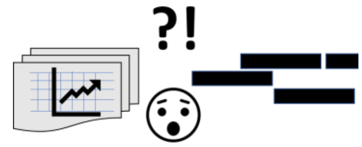
Your business case will identify the objectives, scope, people, and timing as the foundation. A benefits realization process should be established and integrated with your project implementation plan, and with the responsibilities of the respective business owners. Exhibits 17.2-17.5 of the aforementioned reference will provide some extremely helpful tools. Additionally, you should note the following:

- What has changed since the business case and funding were approved? (e.g. growth, economy, strategy, major customer…)
- What factors have impacted implementation that weren't planned? (e.g. people, vendors, infrastructure, processes…)
- How are you tracking on the metrics (baseline vs. planned vs. actual), and why the variation?
- What would have been the results without your project?

A thorough business case assigns accountability, which should motivate everyone involved. As we say, "People do as they are measured". And, as the project accomplishes the excellent results, the only finger pointing will be a proud "thumbs up"!

You Promise What?!

Project Managers have responsibility to implement On Time, On Budget, and On Value. It is appropriate to be intimately involved in establishing the expectations for successfully delivery of the outcomes. Therefore, demand the following:

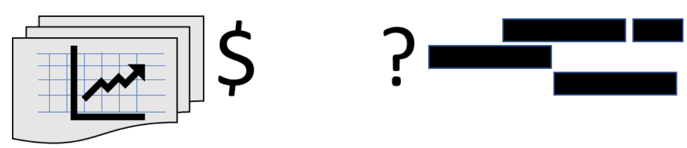


1. Was there a business case developed? If so, when was the project team integrated into the planning process?
2. Is the proposal and contract finished? You need to have access to know what is expected.
3. Capture a clear understanding of the goals, the key sponsor, the timing, and the deliverables – including the expected outcomes.
4. Have a concurrence on what defines "complete delivery".
5. Have documentation on the assumptions and responsibilities.
6. Have agreement on the escalation and change management processes – especially when something is "out of scope".

These are the bare minimums for Project Managers to accept their role in managing the investment. Everyone is excited to help their respective companies make progress, and are most effective when involved early enough to increase the probability of success. Conversely, you don't want to be put in the position of asking "You promise what?!".

Business Outcomes - Assuring They're Not 'Lost in Transition'

Establishing a great business case for implementing a new software application, for reorganizing a business process, for upgrading a technology, etc. is not a guarantee of achieving the projected outcomes. A very critical point in the lifecycle of a project is during the transition from Value Selling to Value Realization. When you move from justifying the investment, to achieving the outcomes. At this time, there is a handoff of responsibilities, and the project is very vulnerable to misalignment of objectives, resistance to change, misunderstanding of intent, and conflicting measurements of success. The Transitioning Checklist is essential, and summarizes the major questions for determining readiness of the project team to deliver the desired results.



Transitioning Checklist:

1. Is there a value realization plan including audit tools, timing, participating members, and acceptance criteria?

2. Was there a thorough explanation for the project team of the outcomes, timing, and methods in the business case?
3. Is this business case still 100% relevant, or does it need some adjustments based on new information?
4. Is the project team committed to achieving the outcomes, including the needed incentives? Not just On Time and On Budget, but also On Value.
5. Is each project team member, and receiving business owner, informed on their responsibilities and expected outcomes? Are the requirements prioritized based on value?
6. Are changes in scope made, based on value goals?
7. What is the contingency, escalation if value isn't realized?

Successful achievement of a business case's outcomes is in jeopardy without the proper transition. There is no doubt that the business case authors, the project team, the business owners, and the executives all desire fantastic results from their investments and efforts. Transitioning properly will be invaluable to ensuring that success!

Robots – "Take my job…please"!

When I hear *"…but what about the jobs?*" in the context of automation, AI, and robotics, I say *"We don't live to work – we work to live!"* And thus, the distracting doubters and the eternal optimists battle it out, almost like a scene from Braveheart. My humble opinion is that we don't need to be concerned with unemployment. We do need to be concerned with how the people respond to having significant amounts of time to CHOOSE how to better themselves, families, and society.

Why do I feel this way? Throughout time, people didn't choose to do back-breaking jobs (as defined by receive material goods or money in exchange for goods or services) – they did it to sustain their families. The fortunate people that could chase their dreams, rather than toil in the fields, figured out how to meet their lower level sustenance, as well as the upper levels of Maslow's Hierarchy of Needs. And isn't almost every creation by humans an attempt to make life healthier, safer, more fulfilling – to make life easier? So why do we cringe when we've figured out a way to "get rid of the jobs?"

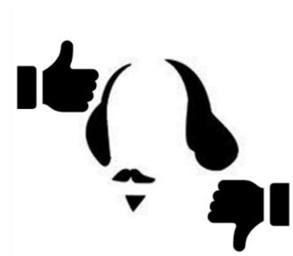
We have great examples where people have risen above "pay me for what I do". Retirees volunteer and enjoy life while having a safety-net to pay the bills. Millions of people contribute to open-sourced software, as well as services such as Wikipedia – not for the money, but for some higher-level satisfaction. Other millions participate in community campaigns, social groups, organizations (e.g. Kiwanis Club, AMVETs), school events, etc. The point is that when people want more out of life than just a selfish existence, they will seek out opportunities that are outside the bounds of a job.

So, back to the elimination of jobs. Let's look, not at the rich getting richer, but visualize that the pie of wealth is getting bigger. We all can share in the fortunes, possibly in the form of a guaranteed income, depending on our choices as individuals, organizations and society. We've slowly accepted that reality through social security, Medicare/Medicaid, and other entitlements. Yes, the few that own the capital (AI, robotics, automation, property…) will further separate from the masses, but society really owns everything and will figure out a way to throttle the power.

So What? *We all will benefit from a life free of toil, pollution, disease. The only question – will we spend our time living a higher quality life, or will we get seduced by hours of playing "Madden NFL 2X"?*

To Upgrade, Or Not to Upgrade – that is the question?

My temptation is to encourage each upgrade. And my conclusion will be that you should!!! But let's, at least, consider the upside and downside.



First, an upgrade of each application will encompass a range of changes – from simply exchanging the software…to application of new features, function and processes that are enabled….to a totally new business model. And, this may be within a context of the current application being underutilized. In fact, it is common that an ERP application's functionality is only utilized by 25-30%. So, how do you value the upgrade?

Here's a checklist of considerations in favor of upgrading:

- Establishing a **strategy of consolidating to a single instance** (e.g. single ERP) and/or consolidating databases, consider the economies in terms of hardware, IT, training, retention, etc.
- **Converting from On Premise to Cloud,** consider the Total Cost of Ownership associated with software, maintenance, services (relative to software), infrastructure, and IT personnel. Also, you must include the security, regulation, rapid assimilation of new businesses, and risks.
- **Adding functionality with the upgrade,** consider the business benefits that impact Revenue, Cost of Goods Sold, Other Operational Costs, and Capital (Fixed Assets, Working Capital)
- **Harmonizing the data**, consider improved quality of data, proper cross-reference and substitution, optimized sources of supply, optimized aggregation of demand
- **Consolidating (physical, virtual) and upgrading the hardware**, consider the economies of smaller footprint, lower utilities, reduced occupancy charges, reduced IT, etc.

- **Centralization of some functions** (IT, Planning, Procurement, Financials, etc.), consider improved efficiencies, productivity, visibility and effectiveness
- **Improved user interface**, consider employee retention, efficiencies, and effectiveness (capture opportunities that would have been missed with older interface)
- **Additional analytics such as Business Intelligence**, consider new management by exception techniques and improved effectiveness (similar to improved user interface)
- **Elimination, sun setting of add-on applications**, consider the reduced maintenance and IT support
- **Reduction of customizations and interfaces**, again, consider the reduced maintenance and IT support
- **The application provider isn't supporting the older versions,** consider how you'll be supported going forward

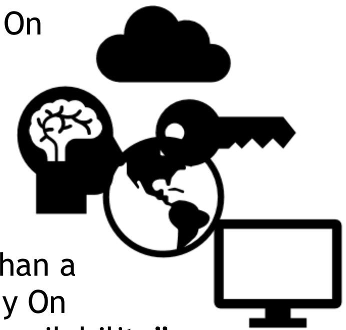
Ok, so there seems to be many reasons to embrace the latest upgrades. In fact, if you are deployed as a multi-tenant application, the upgrade is somewhat automatic. But, thoroughness requires a review of the possible detriments to upgrading.

- **If your processes are certified by industry standards (e.g. ISO, MMOG/LE, etc.)**, you may need go through a review or re-certification
- **If you are in a business cycle that requires full production (e.g. Christmas season, Back To School, etc.),** you may not be able to take any disruption in ability to process orders, procure materials
- **If your IT resources are consumed (with other applications, maintenance, support, etc.),** you may not be able to tend to the requirements for upgrading
- **If you are underutilizing the application,** will you be able to take advantage of the upgraded capabilities?
- **If the upgrade requires other investments (e.g. hardware, IT resources),** you may not have the budget (although Cloud deployment usually diminishes this concern)
- **If it is a significant upgrade,** consider the effort to do a total re-implementation, and whether you should review alternatives (although if you have stayed current with previous upgrades, this may less concerning)

Hmm! The decision to upgrade seems contingent on how prepared your organization is to accept change. Want to know more? For further details on how to value the various considerations contact Eric Frantz.

So What? *As a business person first, you'll want to do what is in the best interest of meeting the business objectives and strategies. And it is wise to choose carefully. While not as dramatic as Hamlet, you may say "Be all my sins remember'd".*

Get your head in the Clouds – Business Benefits beyond TCO



Enterprise and Supply Chain applications deployed in the cloud realize benefits beyond the typical Total Cost of Ownership improvement (vs. On Premise). There are significant business benefits from increased availability, more rapid deployment and assimilation of new businesses, upgraded applications, improved usability features, added functionality, and ability to meet industry regulations and standards.

- Increased Availability - Cloud providers achieve greater than a 99.9% uptime SLA, which is considerably higher than many On Premise capabilities. Even when IT commits to "system availability" of 99+%, the end-user availability of the application may be significantly lower due to application maintenance and support availability. The impact on business can be (at best) reduced business efficiency – or worst, lost revenue/orders.
- Rapid Deployment - The Cloud application and resources include standardized functionality, templates, and process maps for rapid implementation. This not only reduces the cost of planning and executing implementation, it also results in faster realization of business benefits (speed to benefits) associated with the application and faster assimilation of new businesses.
- Upgraded Applications - Valuing the business case for core applications upgrades may be challenging. However, there are significant benefits due to reduced customizations, improved productivity, reinvigoration (usage) of current applications, risk reduction, and overall technology enhancement.
- Improved Usability - Usability is all about winnowing from the many to the few in order to focus on the things that need focus. An analogy is the use of the MRP exception report (rather than review every part number in ascending order, the exceptions are prioritized automatically). COMPANY's usability enhancements provide efficiency, and result in increased revenue opportunities, reduced costs, and optimized working capital and fixed assets.
- Added Functionality - Many times, when utilizing the latest application, other applications are available also. Each one has associated business benefits that impact revenue, cost, and capital. Specifically, the impact may result as follows:

  Revenue – Increase in volume, pricing, promotion, new product introduction, new business assimilation, etc.

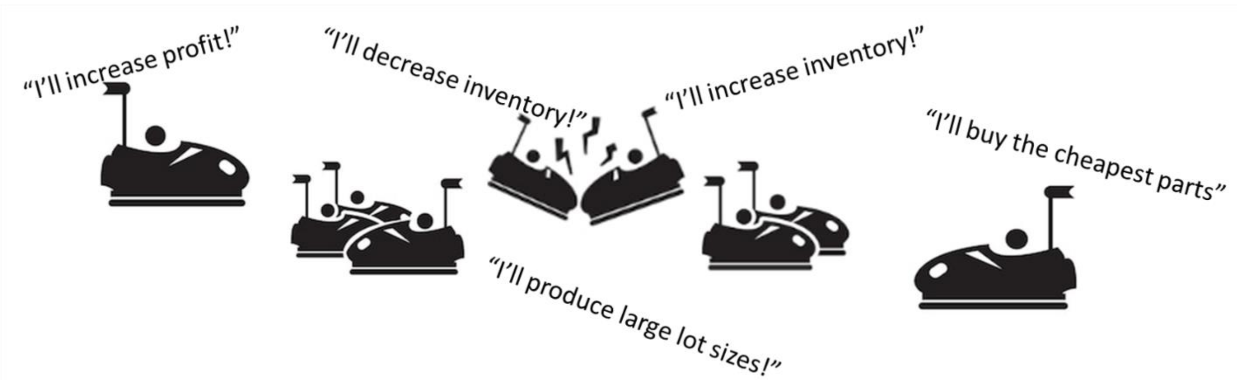
  Cost – Increased productivity, premium/penalty avoidance, waste reduction, freight spend reduction, inventory carrying costs reduction, distribution costs reduction, etc.

Capital – Inventory optimization, accounts receivables velocity, accounts payables velocity/supplier negotiation, fixed asset lifecycle enhancement and utilization, cash-to-cash cycle reduction, etc.

Beyond the aforementioned benefits, companies will consider Cloud to access other applications that are not available to them with traditional perpetual licenses/on premise. Literally, they can reach out globally to external data sources, applications throughout their supply chain, as well as tangential and complimentary services (e.g. marketing data such as IRI, Nielsen). Additionally, Cloud is seen as an opportunity to achieve compliance to industry standards that might not be affordable for a single company (e.g. HIPAA, ITAR, etc.), and for risk avoidance in cases where security requirements would be too costly for individual instances. World class infrastructure providers have economies of scale to ensure costly security measures.

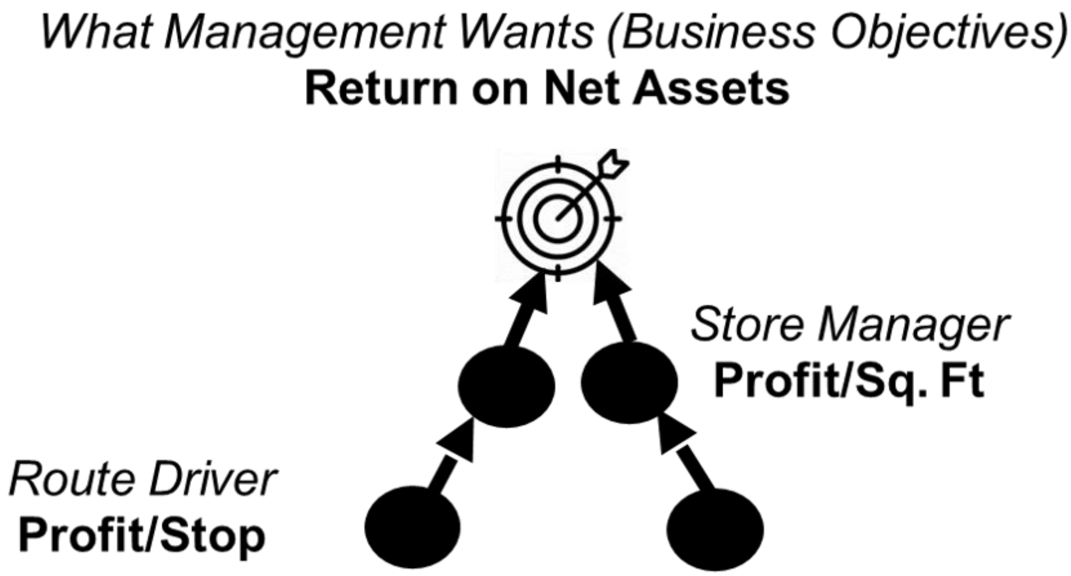
So What? *Cloud is more than just a move from capital expenditures to an annual expenditure. It is also more than a reduction in internal IT expenditures. Cloud brings Value through enhanced systems capability to enable business processes that are essential for achieving corporate objectives.*

Alignment – From Bumper Car to Indy



Management establishes a North Star, defined as the Mission, Strategy and Business Objectives. Think of it as "What the owners want". It may be defined in terms of Growth, Profitability, Asset Effectiveness, or other metric that captures the desired outcomes. Perhaps Return on Net Assets (RONA) is the focus, which is defined as Net Profit divided by Net Assets. The key to success is when everyone in the organization is aligned and working towards improved RONA.

A simple example maybe retail, in which RONA is aligned to a store manager as Profit/Sq. Ft, and to a Truck Route as Profit/Stop.



Here's the right and wrong way:

The wrong way to do it Key metric = Profit	The right way to do it Key metric = Profit per sq ft
Scale back assets without regard to effectiveness	Condense floor space with mix of high profit products
Maximize today's profit at the expense of tomorrow	Divest low profit space
Raise prices	Improve floor layout
Buy poor, low cost supply	Improve labor utilization
Lower salaries	Optimize prices
	Systematize

A retailer wishes to maximize profit while managing asset investment. What does the Store Manager do? How does he/she add value?

The following shows the positive impact of being aligned, and the downside if you aren't:

What Misalignment Means

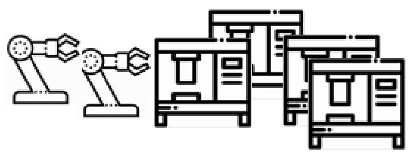
"We want to grow our Return On Net Assets" – **CFO** 

Mis-Aligned

"We buy all new equipment to reduce our costs"

Director of Operations

(Increases Assets while reducing direct costs)

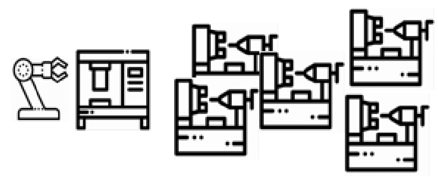


Aligned

"We maximize utilization of existing and new equipment to reduce costs"

Director of Operations

(Improves Effectiveness of Assets while reducing direct costs)

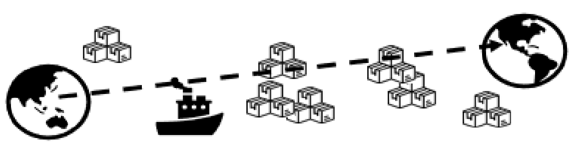


Mis-Aligned

"We will source in China, and take advantage of large quantity discounts"

Director of Purchasing

(Increases Inventory and logistics costs, with risk to Quality, while reducing direct material costs)

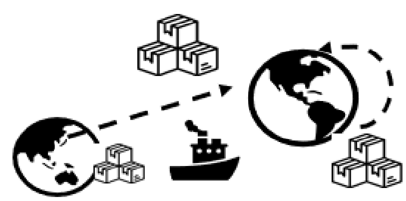


Aligned

"We purchase from lowest total cost supplier, considering price, quality, logistics, service levels..."

Director of Purchasing

(Reduces inventory, material costs, quality costs, logistics costs while ensuring availability)

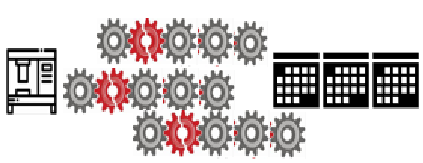


Mis-Aligned

"I'm paid piece-rate so try to run as many pieces as possible, and tend to speed up the process"

Machine Operator

(Increases inventory, quality issues, and direct labor, while reducing some setup costs/piece)

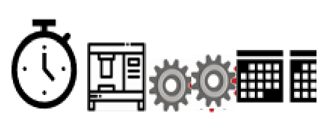


Aligned

"I produce to the schedule and am always looking for ways to reduce cycle times and increase quality"

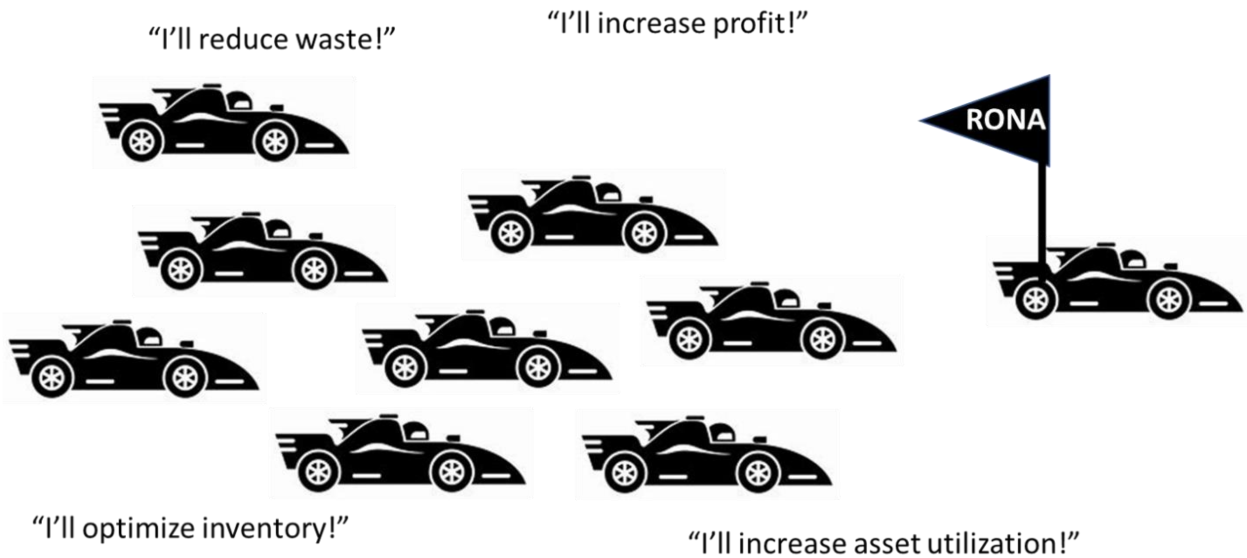
Machine Operator

(Reduces inventory, quality issues, and direct labor, while increasing some setup costs/piece)



Get Aligned

Your people want to do the right thing. It's incumbent on management to understand how each role creates value, defined as contributing to the overall objectives.[1] By establishing the correct role-based metrics there is a clear expectation on what people need to do.[2] Rather than an organization of bumper cars - why not an organization of Indy cars?!



[1] Oakmonte Advisory – Communicating customer insight findings to all stakeholders to create and align bias for action.

[2] Salient Management Company's Alignment Track - Match the business measurements of each function to the overall strategy of top management.

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Turbocharge Investments for Your Advantage

The business case for investments are commonly premised on easily quantified improvements. In many respects, it depends on historical results where data is available and easily measured. This is similar to how we may have approached metrics. “This metric doesn’t capture what my real impact can be – but it’s easy to measure!” However, just because it’s easy - doesn’t make it right! As you become bolder with your projection of benefits in a future that can be chaotic, you begin to realize that your investments are turbocharged.

Let’s consider the following:

We know it is easier to quantify certain benefits of an investment, such as time savings (translated to headcount savings by redistributing to other value-add roles, avoidance of increasing staff when in growth mode) or expense reduction (materials, expenses, outsourcing, etc.). As cited in Advantage 1 (Table 1), these are quantifiable reductions on the Profit & Loss (P&L). Additionally, if Balance Sheet items such as inventory or Accounts Receivables are reduced, there are associated annual expenses on the P&L that are reduced (e.g. cost of money; other inventory carryings cost such as warehousing, handling, clerical, taxes, obsolescence; avoidance of write-offs).

Another set of benefits commonly considered are increased Gross and Net Profits from improved revenue (especially for investments in customer-facing or increased competitiveness) such as reduced (or increased) price, improved Deliver in Full on Time (DIFOT), and/or improved quality. Revenue enhancement is cited in Advantage 2.

Cost Reduction and Revenue Enhancement may be further affected by elements of risk (as cited in Advantage 3.). Typically, a business case will use sensitivity factors to quantify a conservative and aggressive range of benefits. The factors are mostly “guess-work” since they are influenced by “incalculable chaos factors”. That’s just the way the world works. You don’t know if a key person will be off work for an extended period; You don’t know if a batch of materials are shipped from the supplier but defective; A key customer goes bankrupt; The tools wear over a range of use; etc.

A typical business case approach will focus immediately on Advantage #1 for any tangible, hard numbers. Advantage #2 may be included when considered a “hard benefit" or projected as up-side (aggressive). Advantage # 3 may be tangible (fines, penalties, loss capacity, loss of business volume, reduced prices), or intangible qualifiers as hedges on the projected "ROI".

Table 1 - Value DynamiX - Advantage from Investments

Advantage from Investments
1. **Efficiency, Cost Reduction** - efficiencies, inventory, Accounts Receivables, and some acknowledgement of waste - hard numbers related to time, # people, inventory, accounts receivables, and specific cost centers where other expenses are tracked
2. **Effectiveness, Revenue Enhancement** - not easily quantified unless specific cases of lost, cancelled orders due to lack of competitiveness, lateness, quality, inability to comply - some hard, but mostly soft estimates - requiring individuals to "sign-up" for the potential (e.g. our sales people could sell one more machine, or 3% more volume, or....)
3. **Risk**[1] - potential within current bounds (some probability of happening, confined to current focus and capabilities) - e.g. failure of equipment, customers looking elsewhere, many of the complexities (regulation, compliance, certification, economics, geopolitical, climate, technological); could result in fines, penalties, loss of capacity, loss of business volume, reduced prices.... - often cited as intangible causes that could improve or hinder success of the investment in the business case.
4. **Uncertainty Advantage**[2] - *Uncertainty Advantage - Leadership Lessons for Turning Risk Outside-In* (Gary S. Lynch) - capture new opportunities through market differentiation (could be technology, personnel, organizational - projection of new business - incremental to existing revenue and profits - whether currently the business is growing or declining)

However, there is another advantage of the investment that could present much greater upside benefits than even Advantages #1, #2, and/or #3. Uncertainty Advantage - Leadership Lessons for Turning Risk Outside-In by Gary S. Lynch states concisely how company "leaders who, when faced with great uncertainty, pursued it acutely and understood it in the context of the market and actors (customers, investors, strategic partners, regulators, competitors), developed unique talents, leveraged organizational skills and competencies, sought out innovative capabilities, and then, when the timing was right, pounced on the opportunity to unleash uncertainty as a market differentiator." Whereas Advantage #3 has somewhat a negative connotation, Advantage #4 is very positive. Your investments in process, technology, people, and organization already include the potential for the Uncertainty Advantage. The question is whether your business case considers it. Let's look at some examples.

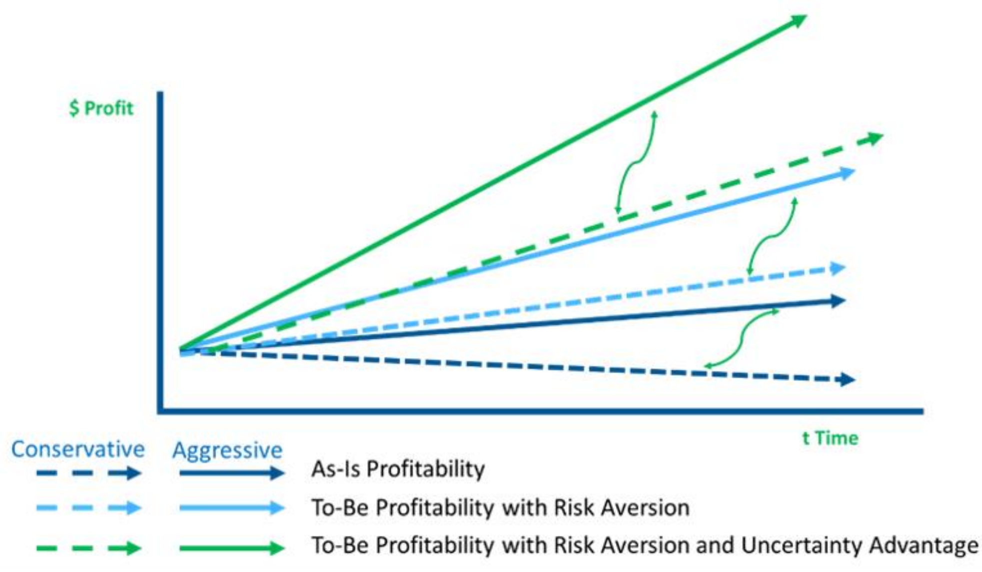
Table 2 - Examples of benefits identified for investments

Example 1
Investment – New CNC flexible machining center, replacing old dedicated manual or obsolete equipment
Advantage 1 – Reduced cycle time, automation results in labor savings
Advantage 2 – Improved uptime and capacity provides higher capacity, which results in increased revenue and profit (presumes demand)
Advantage 3 – Improved mean time between failures (MTBF) enhances quality of product and capacity, and reduces scrap and rework costs
Advantage 4 – Flexibility to accommodate different configurations (programmability, random tool selection, flexible fixturing), resulting in seeking and taking on new products as traditional customers fade, and new customers can now be considered
Example 2
Investment – Product Development applications, replacing non-integrated CAD, physical prototyping
Advantage 1 – Reduced development time, results in labor savings
Advantage 2 – Faster release of product to market, which results in increased revenue and profit (presumes demand)
Advantage 3 – Advanced design for manufacturing enables high predictability of fit, function, resulting in reduced manufacturing costs and potential customer rejection
Advantage 4 – Flexibility to import, modify, redesign external products configurations opens possibilities for new markets/customers, resulting in seeking and taking on new products as traditional customers fade, and new customers can now be considered
Example 3
Investment – e-Commerce
Advantage 1 – Reduced direct sales and catalog expense, results in labor and selling expense savings
Advantage 2 – Faster, richer (upsell, bundling) promotion to greater reach of prospects, which results in increased revenue and profit (presumes demand)
Advantage 3 – Defends against competitors that are offering e-Commerce, and reduced order-handling errors, which results in reduced expenses and avoidance of loss of customer orders
Advantage 4 – Foundation and infrastructure for "push" or "sought out" or "on demand" expansion into other products, markets, and resulting in seeking and taking on new products as traditional customers fade, and new customers can now be considered
Example 4
Investment – Quality Management System
Advantage 1 – Reduced inspection, audit, administration, compliance efforts, results in labor savings
Advantage 2 – Improved quality of product, performance, and customer services, which results in increased revenue and profit (presumes demand)
Advantage 3 – Improved processes enhance quality of product and capacity, and reduces scrap and rework costs, customer penalties, industry restrictions, which results in reduced expenses and avoidance of loss of customer orders
Advantage 4 – Foundation and infrastructure for efficient and effective processes, and enhanced reputation, and resulting in seeking and taking on new products as traditional customers fade, and new customers can now be considered

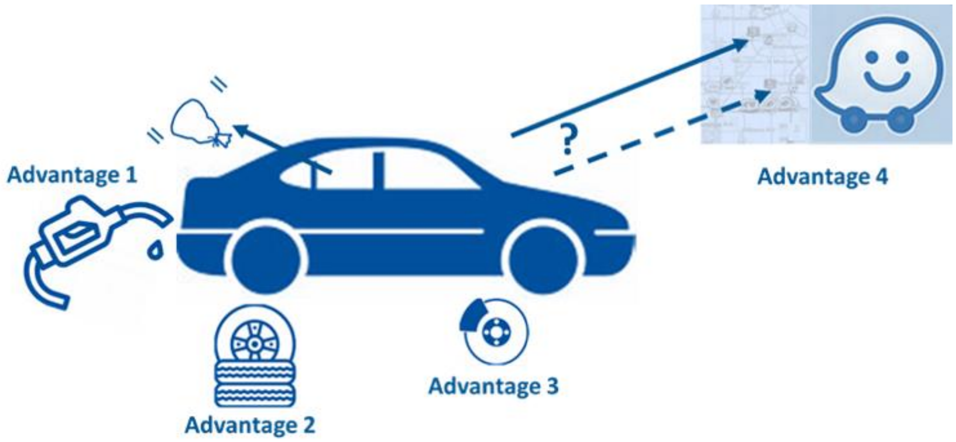
Example 5
Investment – Performance Management and Analytics
Advantage 1 – Reduced reporting time and analysis time (through management by exception) and improved performance by all respective roles, results in labor savings
Advantage 2 – More effective and proactive capture of new opportunities, which results in increased revenue and profit (presumes demand)
Advantage 3 – Management by exception results in enhanced quality of product and capacity, and reduces scrap and rework costs, customer penalties, industry restrictions, which results in reduced expenses and avoidance of loss of customer orders
Advantage 4 – Foundation and infrastructure for understanding current and potential business opportunities, resulting in seeking and taking on new products as traditional customers fade, and new customers can now be considered

Your Advantage

The dynamics of business ensure that, despite history, your future may take a different path. Today's strategies and tactics will likely adjust given the chaotic factors such as technology, customer demand, business fluctuations, regulation and a multitude of other influences. The effectiveness of your investments today, when only looking in the rear-view mirror, may provide temporary improvement, but leave you stranded in the future. The forward-looking view will recognize the risks and uncertainties that, when considered properly, can be opportunities.



To finish with an analogy, your car needs maintenance as you begin a journey. You gas up the car and shed the litter (Advantage 1 – makes the trip possible), install new tires (Advantage 2 – improves your mileage), and fix the brakes (Advantage 3 – prevents a breakdown or worse). So far, you have ensured that you can make the trip safely, and at a reduced cost. Since there's the possibility of a road or destination closed, you should prepare for the uncertainty (Advantage 4 - alternate path or destination). Your advantage – you've turbocharged your investment!



[1] A certain amount of risk is inevitable due to the multitude of variables that impact a specific process or person. Some of the variables are influenced by chaos (Chaos Theory) or probabilistic factors (Quantum Mechanics). Small differences in initial conditions (such as those due to rounding errors in numerical computation) yield widely diverging outcomes for such dynamical systems, rendering long-term prediction impossible in general. This happens even though these systems are deterministic, meaning that their future behavior is fully determined by their initial conditions, with no random elements involved. In other words, the deterministic nature of these systems does not make them predictable. This behavior is known as deterministic chaos, or simply chaos. what-is-the-relationship-between-quantum-physics-and-chaos-theory

[2] Uncertainty Advantage - Leadership Lessons for Turning Risk Outside-In, a book from Gary S. Lynch, uncertainty advantage

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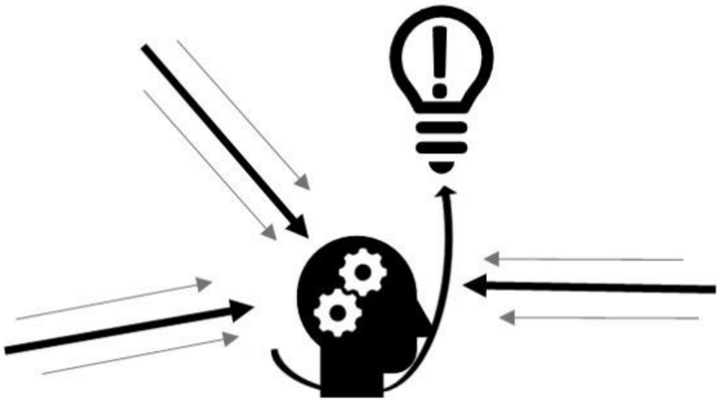
Are you engaged in Value Selling? Incite your prospect through Insights

So, yes, double entendres abound! First, some clarity on the words:



Incite - The positive definition is to encourage or stir up, stimulate, excite, arouse, awaken, inspire, engender, ...

Prospect - potential customer

Insights - the capacity to gain an accurate and deep intuitive understanding of...., an awareness, understanding, comprehension, appreciation, acumen, ... More specifically, Insights are intended as initial research into the prospect's challenges, trends, risks and uncertainties, financial performance, and opportunities.

That's nice, but what's the point?

What are Insights? – Insights are preliminary research that provides discussion-points to engage with the prospect's executives and functional/process managers. This may include compelling points that are unknown to the prospect, or affirmation that you are empathetic and knowledgeable about their challenges.

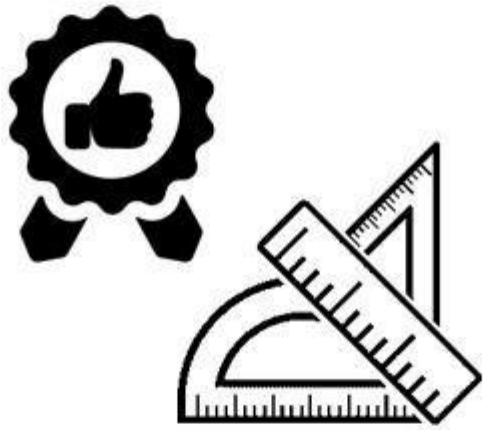
Why Insights? – When selling the value of your solutions to a prospect, Insights provide a compelling reason to give you an audience. You demonstrate an understanding of their challenges, and align with possible solutions. Rather than lead with features and functions - you have a business discussion.

How? - Information abounds for public companies, as well as for the industries of both public and private companies. Do your research, including websites, key searches, analysts reports, financials, and 3rd party resources. I'll discuss further in a subsequent post.

So What? - Elevate your game to what provides compelling reasons for your prospect to embrace you. Business first, solutions second!

Ensure Quality of the Quality Metric

Confused by the title? Isn't it redundant? Well, let's clarify. Quality has a plethora of



definitions, but to summarize:

The quality of a product or service refers to the perception of the degree to which the product or service meets the customer's expectations. ISO 8402-1986 standard defines quality as "the totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs." Quality is about making organizations perform for their stakeholders – from improving products, services, systems and processes, to making sure that the whole organization is fit and effective. Managing quality means constantly pursuing excellence for the stakeholders: making sure that what your organization does is fit for purpose.

That's a mouth full!

Now, what about "metric"? The key to an effective metric is that it must be measurable, timely, realistic, meaningful, and motivates the correct behavior. Too few, or too many metrics are bad. And, the context of the metric is important, thus ratios are likely better than absolute numbers. For example, inventory $ as a metric can be misleading if your business is growing or shrinking, whereas inventory turns (or days of supply) is relative to the size of business (Cost of Goods Sold is the numerator, average inventory is the denominator for inventory turns).

So – you want to ensure that the metric is "fit for purpose" (the first Quality in title) to track the Quality (the second Quality in title) of your products, services, organization, etc.

Let's look at a very common Quality related metric – First Time Yield (FTY) or First Pass Yield. If your organization currently posts an FTY of 95%, that means 95 good parts made it through all of your processes out of 100 that were started. That also means 5% have been scrapped or reworked along the way. However, a full complement of meaningful measures must also address the upstream and downstream effects, including:

Upstream you need additional material and labor, and capacity, and expediting, and…

Downstream you have delays in scheduling and shipments and resultant dissatisfied customers

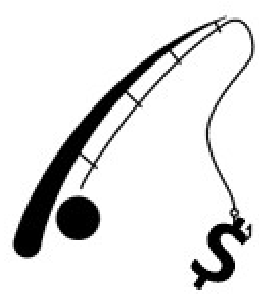
Overlay the cost of quality which suggests your Quality improvement efforts should focus on preventing the quality failures, thus resulting in an overall reduction in costs. As Philip B. Crosby ("Quality Is Free", 1979) said: "Do things right in the first place, and you won't have to pay to fix them or do them over."

You get the picture – there isn't one magical metric for Quality. You need to have measures that are holistic (the total impact of imperfection), and that motivate the correct behavior based on factual information.

So What? Back to our example. You might resist improving the FTY from 95% to 98% if you think the cost to make the improvement outweighs the savings? But, likely, you haven't identified the total benefits. And, what if the 2% remaining are game changers – causing lost customers? Your work isn't over! Best check the Quality of the Quality metrics!

Reel In The Real Value

OK, so only the easily quantifiable benefits are to be included in your business case for investments. Only the costs that are reflected immediately on your P&L and Balance Sheet. And, oh, by the way - headcount is a sensitive issue, so let's not include full-time equivalents reduction. Also, signing up to revenue increases is a challenge because it may "increase our salespeople's quotas". And, some of the inventory carrying costs such as warehouse space aren't going to be eliminated



because they are stepped-fixed costs. And so on and so on.

Hold on though! Aren't you doing a disservice to the real impact of your investment? You've taken a short-term impact view, whereas the investment is probably a very long-term improvement. You've not included the opportunities of avoidance. Did you consider:

The avoidance of a cost increase?

The avoidance of needing to add capacity?

The avoidance of needing to increase inventory?

The avoidance of a revenue decrease?

The avoidance of hiring additional people, or overtime, or outsourcing?

The avoidance of failure to comply?

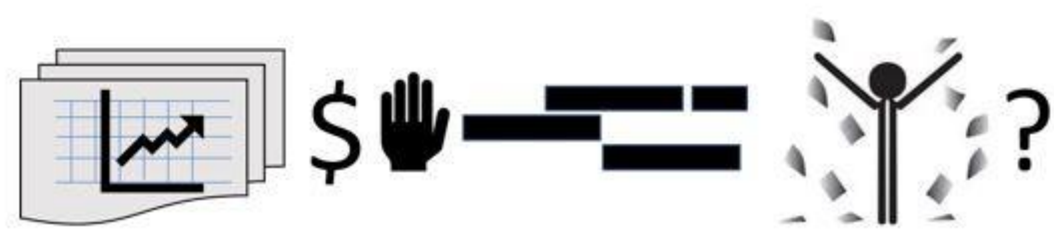
The avoidance of fines?

And, by the way, the warehouse space costs are not necessarily reduced immediately, but if you reduce enough inventory you may avoid building a warehouse expansion in the future. Don't forget, all the benefits should be related to the future years of organic growth (or shrinkage), acquisitions, divestitures - not just the immediate business.

So what? Accepting that the soft costs (or you may refer to them as hidden costs or intangibles) are "in play" for your business case is a much truer representation of the long-term impact of your investment. Even if it is a stretch - "reel" in the real value.

Chaos Sera Sera – Whatever will be, will be!

So, you corral the resources to develop alternatives on how to move your company forward. Whether you are striving for the latest technology, aligning to business objectives, or replacing existing systems, you've developed a plan for success. And, you've presented your proposal to management, only to find that you are competing with a perceived easier alternative – Do Nothing! It's almost like being told "It will work itself out".



Oh really? So the "future is predetermined?" Your company has no free-will to improve? Well, the reality is that status quo isn't for free. In fact, if you don't take charge, the competitive forces will drive your customers the other direction. Those forces may include new technology, new competitors, or even just process erosion. Status quo will leave an impression of chaos – that you aren't prepared for the future.

So What?

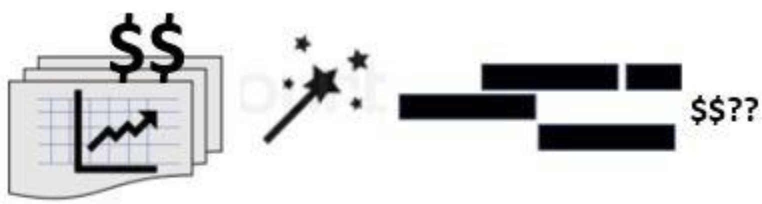
Back to the drawing board. Find a better alternative – before your customers do!

For further discussion on this topic:

https://www.linkedin.com/pulse/sense-urgency-show-em-status-quo-isnt-free-eric-frantz-1/

Value See Me, Value Don't

Are you realizing the value that you expected from your investments? Is it magic that we achieve the benefits that we expected? Or worse yet - do we care?



There is a challenge in identifying the business benefits of a process improvement or organizational change. The technology companies (providers) will emphasize feature and function through their marketing collateral and product demos -because that is the "comfort zone" of their expertise. "We know our products!" However, the customers (receivers) are seeking solutions and partners to improve their performance and reduce risk. It is not the bits and bytes and glitz of the technology - it's the impact to the bottom line. So, the technology companies attempt to bridge the chasm by providing "value statements"', or even helping the customer develop the justification through a return on investment (ROI) analysis. Mostly, this is to get the customer over the "goal line" of signing the contract.

But, what happens once the contract is signed? Most of the time "poof" - all is forgotten. The magic of the ROI and associated benefits that are estimated seems to vanish. Everyone involved in institutionalizing the new solution are measured and focused on "on time" and "on budget". They forget about the value that was projected.

Why exert the effort of projecting the benefits if you don't intend to monitor whether they are achieved? The Value Realization should be key steps within your project plan. If you are the customer of the technology, your sponsors (executives) of the investment have expectations of accomplishing the benefits - so it is well worth the effort. It also helps motivate acceptance of your next request for funds!

If you are the technology provider, it builds your credibility by delivering real value, rather than over-promising and under-delivering. It also provides real experiences for case studies and selling to your next customer.

For more insights on Value Realization, read:

https://www.linkedin.com/pulse/you-promised-what-eric-frantz/

https://www.linkedin.com/pulse/business-outcomes-assuring-theyre-lost-transition-eric-frantz/

https://www.linkedin.com/pulse/connecting-behavior-results-eric-frantz/

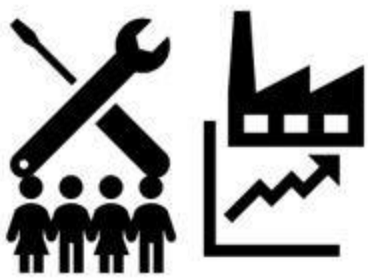
https://www.linkedin.com/pulse/realizing-benefits-only-finger-pointing-thumbs-up-eric-frantz/

Also, read: Keen, Jack M. Making Technology Investments Profitable – ROI Road Map from Business Case to Value Realization. Second Edition, Hoboken, New Jersey: John Wiley & Sons, Inc., 2011.

ABOUT THE AUTHOR: Eric Frantz's passion is aligning customers' investments, and the stakeholder's personal and business measures, with an understanding that value is personal. "Value is from the customer's perspective, and may include financial impact, risk, governance, safety, or other situational factors". Eric works with global customers to capture value from their investments in technology, process change, and organization realignment. His 25+ years' experience includes value-focused management and consultant roles in manufacturing, supply chain, sales automation, reverse logistics, inventory and production planning, ERP, business intelligence, performance management, and operational strategy. Eric utilizes a unique combination of analytical and communication skills to facilitate value selling and value realization with all levels of an organization, from individual contributors to senior executives. You can contact him through: mailto:frantzeric1@gmail.com || https://www.linkedin.com/in/eric-frantz-0071969/

The Value of Improving Overall Equipment Effectiveness

Organizations are challenged to optimize performance as aligned to their strategic objectives. Typically, the foundation for performance improvement is the drive to do “more” with “less”. They want to increase the productivity of their people, expenses, and assets (inventory, equipment, buildings). In capital intensive companies, the production equipment is essential to ensuring they can meet demand requirements. So, how do you know if you are improving the productivity of that equipment?



Overall Equipment Effectiveness (OEE) is a compounded metric that indicates the resultant % output of good parts relative to theoretical potential output for a given work center, production line, department or other business unit. While there are multiple factors of influence, and variations on how to calculate, OEE provides a relative measure of improvement over time. Increasing the OEE towards 100% is directionally “good”, if properly aligned to the overall business objectives.

OEE should be considered in the context of impact to the business. In growing businesses with high demand, OEE may have a direct impact on ability to meet customer requirements. When Demand is greater that the resultant output capability (as measured by OEE% of theoretical capacity), there is a risk of losing sales. To compensate, a company may have a contingency plan, such as buffer inventory, extra shifts, premium services, etc. Ultimately, the lost business (Gross Margin on those sales) is the difference of the demand vs. total output (OEE% of theoretical capacity plus the contingency output).

The lost business is not the only business impact. There are the additional costs to support the contingency, and the costs associated with the erosion of OEE from 100% (costs of waste). Those erosion costs are in the form of scrapped parts, downtime, wasted labor, maintenance, unused capital equipment, etc.

Conversely, companies that have diminished demand may find the resultant output from the OEE eroded capacity to be adequate. However, there are still the costs of waste, and possibly some contingency costs. Ultimately, it is essential to understand the context of the situation to properly prioritize actions.

So What? The business impact of Overall Equipment Effectiveness improvement can be very significant. This is especially important for bottleneck operations and/or businesses. OEE not only tracks the output potential, it also provides insight as to areas of improvement which can have the greatest impact on the top and bottom lines of the business. Want to know more? Contact Eric Frantz for the potential impact to your business.

Acumen on Business Acumen - Speaking C-Level Language

Sellers in the high tech, digital era are increasingly challenged to provide insights on how customers can attain their objectives. Gartner (reference 1) cites that 74% of executive buyers said that salespeople focus too much on their product, and only 34% felt salespeople did a good job communicating business value. The key is translating any suggested improvement into the languages of the interested parties including operational, technical and executive. Developing your business acumen will enable a quick understanding to deal with each business situation (risks and opportunities). You’ll be better prepared to lead your customers to excellent outcomes.

Business Acumen in the Digital Era is increasingly invaluable

So, what is so different about the Digital Era? Generally, the initiatives will cross organizational boundaries, rather than point solutions. This draws influence and approvals from multiple functions, requiring increased collaboration and concurrence on expected outcomes. And, your customer's stakeholders have quick access to experiences, as well as competitive and disruptive approaches, so are very informed. In addition, the significance of the investments warrants C-Level participation and final approval. You'll want to reassure the respective parties how your solution will provide positive impact and is differentiated from others. Sounds like a need to brush up on business acumen!

Lead with results the meet the executive's motivation

The executives' world is not static; thus, they are motivated to ensure competitiveness and continuous improvement that is afforded by the considered projects. Fundamentally, their language is in the context of "how are we driving value for our stakeholders?" as defined by the business objectives and goals. Therefore, rather than promoting new forecasting techniques, inventory planning collaboration, or a plethora of other business improvement techniques – it is imperative to lead with improvement in revenue, costs and capital, as well as how the changes are aligned with the overall strategies, risk factors, and governance. By translating the technological, process, and organizational changes into the language of the executive, there will be an alignment to their personal and business motivations.

So, imagine you are selling inventory management software and have an audience with a prospect's CFO. The key is to know the CFO's concerns about eroding return on assets, troubling inventory turns, and increasing stock-outs. Rather than demonstrating the latest forecasting and planning techniques, you'll want to focus on the reduced inventory, improved lead times, and greater customer satisfaction. And, you'll want to cite the accomplishments of best-in-class peers, enabled by your solution. Rather than leading with your solution, you can lead them to your solution.

You should seek business acumen

So, how do you ensure that you can engage in this language? While the comfort zone of many sales, pre-sales, and business consultants is related to their solutions, it is very common to have an under-appreciation, or even discomfort in discussing business challenges. Even worse is the discussion that relates to the customer's financial performance. However, it is crucial that you can align your solutions to those high-level metrics. How does it impact sales, profit, and capital utilization?

So here's some tips for refining your knowledge and communication skills on how businesses measure performance, and how their stakeholders grade them.

1. To start, pick your favorite prospect or customer and get familiar with their business model and financial statements. The CEO and CFO's views on the business,

competition, and economy can be gleaned. As well, their financials provide a very basic report on how they measure their performance. The P&L (Income Statement) and Balance Sheet are important, so get familiar. Additionally, seek press releases, industry analysts reports, LinkedIn, etc. for additional insights. And if a term is confusing, there's always Google and Wikipedia!

2. Commit to reading the Wall Street Journal, or other major financially focused news sources, at least 15 minutes a day. Home in on industries/sectors that reflect your market segments.

3. Pick a knowledgeable acquaintance who happens to be a CFO, accountant, finance analyst, etc. This trusted advisor is a quick source for providing information on how CFOs and CEOs measure success.

4. Stay connected to rich sources of current business news, including reference sites and business magazines and associations. Here are a few:

a. http://www.investopedia.com/ - Investopedia reference on financial terms

b. https://www.wikipedia.org/ - Wikipedia reference, in which you can research any topic

c. http://ww2.cfo.com/ - CFO magazine and association, to understand what is current in the CFO world

d. https://www.bloomberg.com/ - Bloomberg, a leading site on Finance

You might eventually want to get exposed to business acumen training as there are a plethora of online offerings (for example: http://www.skillsoft.com/; http://www.learnit.com/course/business-acumen). And, you might read Seeing the Big Picture, by Kevin Cope, which is an excellent book described as "an MBA under 180 pages".

The key is to get started now. Create your differentiation as a business partner, not just as a vendor. This most certainly is enriched by your ability to speak the language of the C-Level, who ultimately sign the checks!

Do you concur? Comment below or email me at eric.frantz@VSRCouncil.org.

Reference 1 - http://insightdemand.com/wp-content/uploads/2014/05/Buyers-want-to-hear-about-more-than-features-Gartner.png

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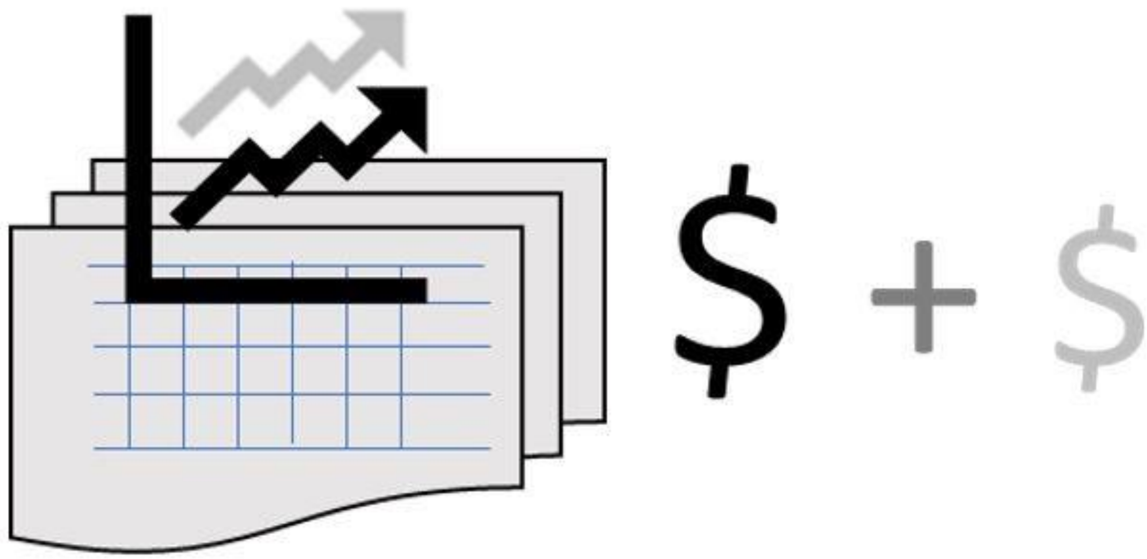
Intangibles are NOT nothing!

Stop! Don't accept the resistance to "intangible benefits" as you build the business case for change. There are various excuses for excluding the so-called soft benefits, all of which can be overcome with approaches such as outlined below.

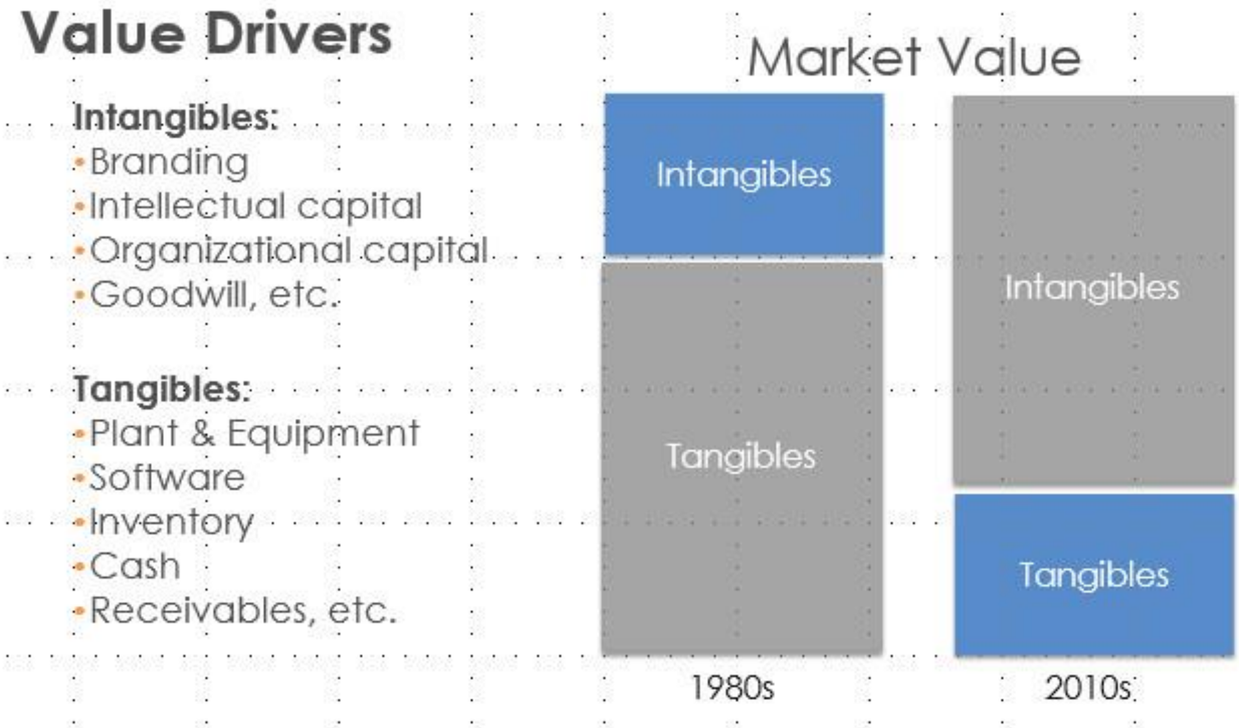


How many of these pushbacks on using intangibles have you heard?

- “We only recognize hard, real savings”
- “It isn’t a benefit unless a “head” is reduced”
- “There’s no way to value a benefit that is intuitive or vague”
- “It’s too difficult to verify that benefit was derived from our initiative”

However, just because there is hesitance, doesn’t mean it isn’t worth quantifying. In fact, you are really doing a disservice to the stakeholders if you avoid those benefits. Your opportunity is to help your stakeholders see the world in a new and highly relevant way. Here’s how:

The company is built on intangibles



It is important to recognize that companies are increasingly comprised of intangibles. Whereas the market value (stock price * number of shares) of traditional manufacturing companies used to be a high proportion of tangible assets (e.g. buildings, equipment, cash, etc.), and a small portion of intangibles (branding, intellectual capital, organizational capital, goodwill, etc.), the current trend is the opposite. As companies trend to more services/experiences and outsourcing, the result is a higher proportion of intangibles relative to market value.

Executives know that much of a company's value is derived from intangibles. But, how does that relate to projecting the value of improvement initiatives in the digital age? Well, especially for the executives, it establishes a mindset and precedence to look beyond the obvious direct benefits.

Looking outside the box

It is typical that improvement initiatives will address processes that straddle functional boundaries, and will have significant impact on downstream activities or outcomes. The easily quantified impact to single processes (such as efficiency improvement) are complimented by even greater impact, but less easily quantified improvement in outcomes downstream. An improved order entry system will reduce effort to load accurate orders, but also improve the production and supply in terms of reduced waste from making the incorrect product, reduced inventory from planning the wrong components, improved on time shipments, etc. Or, an online insurance quotation and application reduces the manual labor efforts, but also increases the fit of the service by providing alternative offerings for your specific needs, the timeliness of the coverage with real time updates, the agility in accommodating change online rather than needing to visit an office, and customer satisfaction.

The challenge is that the downstream benefits begin to look fuzzy. How do you value benefits such as satisfaction, innovation, morale, competitiveness, compliance, or risk? Certainly, value is not only math – it's art! If we define intangible benefits as those that are vague or elusive, rather than unquantifiable, we just need to apply some creativity to that art.

Test your aptitude

Improved customer service is a very common benefit that is considered intangible? But, let's try anyways! Assume it means less customer complaints, less expediting, less returns, retention of customers, increased sales. With a little effort, you can quantify those attributes. You may have captured the historical costs associated with each – which establishes the basis for the projected benefits. Your Customer Support group likely logs the complaints – which take time and potentially require remediation – at an expense. Your Inside Sales or Warehouse personnel likely capture the return incidences including freight, handling, and remediation (possibly substitution). And Sales likely knows about orders lost due to dissatisfied customers or your lack of competitiveness. Project your improvement – and calculate the benefits!

Here's another example of a benefit relegated to the intangible classification. You can apply your left-brain techniques to improved employee morale (less days off, higher productivity, lower employee turnover). By the way, it is typical that the hiring costs to replace an employee are 50-100% of their first-year compensation, depending on level in the organization.

OK, your turn. How would you project benefits of reduced risk, increased compliance, and increased innovation? Once you've applied your artistic talent, you can also refer to Making Technology Investments Profitable (see reference 1) for further examples.

But maybe your company has another reason for excluding the intangibles?

Can't or Won't?

Companies vary on willingness to accept other than easily quantified direct benefits. On one extreme, a company only recognizes headcount reduction. This ignores the avoidance of increased headcount if the company grows, as well as the many other benefits in terms of cost reduction, asset utilization, and increased sales. Or, a company may only recognize easily quantified reductions in waste, penalties, or other operational costs, but not allow the use of headcount reduction. It’s more of a case of Won’t (include intangibles), rather than Can’t quantify and include. So, what do you do?

Make it visible

Regardless of the resistance to what is determined to be soft or intangible benefits, persevere. As you develop your business case, always capture these benefits and document them - even in the narrative. Better yet, identify the order of magnitude of the benefit (e.g. $100-300,000/year, or “thousands of dollars”, or 1-3% revenue increase, etc.). While these may not make the ROI calculation due to the company’s rules, it colors the initiative positively. And, it is a truer representation of the initiative’s impact. After all, intangibles are NOT nothing!

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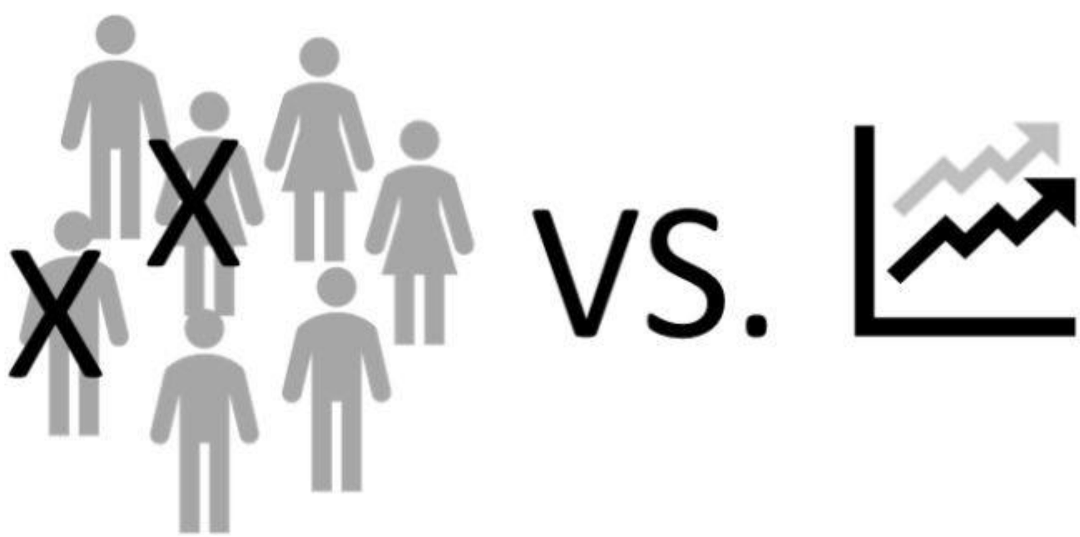
Reference 1. Keen, Jack M. Making Technology Investments Profitable – ROI Road Map from Business Case to Value Realization. Hoboken, New Jersey: John Wiley & Sons, Inc., 2011.

Mining the golden nuggets – Leveraging the Effectiveness, in addition to Efficiency

Understanding the value of your process improvement, solution, or change is paramount to successfully fulfilling management's expectations for investments. Therefore, you want to ensure you've identified the entire impact. Just as a mining for gold analogy, you don't want to miss the major veins. Much to your delight, the big nuggets are hidden in plain sight.



Finding the gold – look beyond the obvious

When you view a process change, or new technology in isolation, it is easy to miss the total impact to the business if the focus is only on the internal benefits (efficiency) from the process improvement. It isn't just about making the process better – it's about making a better process. What does that mean?

Let's take an example. The latest computer numerically controlled (CNC) machining center precisely machines a part to specification, with increased torque and speed – thus improving the productivity of the center. This results in a higher rate of production, thus reduced direct labor and increased capacity. That might sound exciting, but wait. There's more. That same machine is flexible to accommodate lot size of 1, thus minimizing the batch size and subsequent inventory levels and throughput time, while improving yield and ultimate quality. All of this leads to increased competitiveness, which results in increased volume and improved customer satisfaction. Wow – so what appeared to be a reduced cost opportunity (efficiency) improves the effectiveness of my manufacturing, which leads to new captured business?

So, how significant can this be? In one example, a manufacturer of shafts implemented new CNC machining and turning cells, with a benefit of $10,000 annually for one part number of 10,000 shafts/year due to reduced direct labor. However, when they sized the inventory reduction and subsequent improved sales, the annual improvement to the bottom line was an additional $74,000/year, plus a release of $60,000 in capital (reduced inventory).1

So, here's a quiz.

What are the efficiency benefits, and the effectiveness benefits of the following?

Improved planning process, resulting in optimized inventory management (right part, right place) - Well, when evaluating the planning process, you'll likely cite improved productivity, thus fewer planners required. But, don't forget that the improved planning will result in reduced inventory, higher capacity utilization, more competitiveness in due dates….

Automated payroll services – Payroll services (including 3rd party) ensure prompt and accurate payments, while reducing processing costs (processing labor, overhead). Even more significant are the downstream benefits of avoiding the penalties and negative attitudes due to "disrupting the employee's life". After all, the compensation is the primary reason they are an employee! And, the service provides an online, up to date accounting of the employee's total compensation, thus they can eliminate any manual record keeping. This certainly helps when they manage their 401K contribution and tax filing!

Online Travel Services – The ease of shopping online for the best hotel and air rates, first, saves the individual time. Rather than drive to AAA or a travel agency, they merely surf through the hotel, airline, or specialty services and compare rates. The immediate benefits are the saved shopping time, as well as potentially reduced hotel and air rates. In addition, there may be great value in the plethora of sites available to build out their travel with extra services, "things to do", as well as the insights from comments by individuals that had already enjoyed (or not enjoyed) the experiences. And, the time saved by not driving to arrange the travel is now available for other value-add activities.

You can imagine how any service or manufacturing process, when improved, includes the direct benefits within the process (efficiency) and the additional benefits from the impact downstream (effectiveness). Insurance services, medical analysis, shipping methods – just to name a few. And certainly the change from landline to smart phone is not just a more efficient method of making calls – it's transformative on how you communicate, perform services, seek entertainment and so much more!

Bottom Line - When implementing a technology or a specific business process - look beyond the respective process to the impact upstream and downstream. The effectiveness of a process change is significant – many times more than just the efficiency. Don't just think of the obvious, or easiest to calculate. Else, the largest gold nuggets are not revealed!

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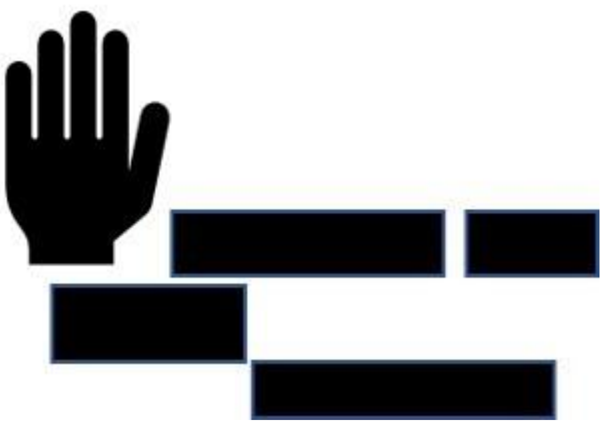
1. Effective, Not Just Efficient - The downstream benefits of process improvement; An Eric Frantz White Paper April, Value DynamiX

A Sense of Urgency - Show ‘em the Status Quo isn’t Free

Investing in solutions during the digital era is not easy for buyers. Whether it is the challenge of understanding new technologies, or time constraints, or too many people in the decision process, there are a multitude of excuses to resist the initiative for change, resulting in keeping the status quo. The good news is that this temptation can be significantly mitigated by accentuating the solution’s potential impact of solving the business problem. Maintaining the status quo has a cost that you can highlight.



Accentuating the risk of Status Quo is based on an understanding that there is a need to change, whether due to competition, technological advancements, economics, etc. And, if you emphasize the cost of delay, it will elevate the discussion from the narrative to something that is easily understood. For example, improved competitiveness may capture new business, new market share, or higher prices, which result in increased gross margin and/or net operating profit. An increase of $1 million per year revenue due to volume could add $250,000 Gross Margin, or over $20,000 per month. Therefore, the $20,000+ is the cost of delaying the decision each month.

As you engage your customer, develop an understanding of why they are tempted to delay. You’ll need to navigate those reasons, whether it is the hesitancy of individuals, their approval process, etc. You should ensure that “value” is emphasized early and often, which will help to include all interested parties. It will answer the question “what’s in it for me?”.

Want to explore more on how to communicate that Status Quo isn’t free? Follow this link for the full article. A Sense of Urgency - Show ‘em the Status Quo isn’t Free

Outcomes – Grow a Beard, Don’t Just Stop Shaving!

Maybe I have too much time on my hands! But out of that idleness – a fairly profound realization. My wife kept asking “Are you growing a beard?” and I would respond “No, I’m just not shaving!” Subtle word change, but a dramatically different approach to life. Let me explain.

My attitude of “just not shaving” shows an abandonment of purpose as far as my final “appearance”. It’s a mere focus on my actions – or tactics without a goal in mind. It’s easier to not shave every morning, not suffer the inevitable razor burn, not waste my time, or whatever.... My actions and measure of success are not really focused on the final outcome.

But it is very different if I have a goal of growing a beard. In that case, I have a desired outcome, a purpose, etc. and I must go through the proper (aligned) tactics to achieve that outcome. There’s additional work (beyond just not shaving), including trimming, combing... No, I’m not using Just For Men to hide my gray. I feel my gray is well earned.

So, another lesson on how you need to have your tactics and metrics aligned to the desired business outcomes. Whereas “just not shaving” is like reducing inventory $ across all SKUs, “growing a beard” is like optimizing inventory for improved customer service; “..not shaving” = machine lots of parts, “..a beard” = correct # of quality parts for a specific customer order;.....

So What? – Your company wants you to grow a beard – not just stop shaving!

Ok – So now I need to think of a moral lesson for not showering!

Value DynamiX Whitepapers

The following are a sample of available whitepapers:

- VMAccessor
- VExecutive
- valuemining
- Sustainability
- ServiceValueIntro
- ServiceValue
- prototype
- ProductEvol
- MetriX
- MachCRMCase
- KeyMetricsR
- ITvalue
- inventorydynamics
- Intangibles
- Evolving to a Virtual Executive
- eva
- Efficiencyeffectiveness
- Effectiveness
- DDSNValue
- CustMetriX
- complexity
- Businessacumen
- AirMROCase