



Closing the Gap: How Digital Maturity Impacts Adoption

Geoffrey Jackson
CEO & Founder
Jackson Consulting Group, LLC
April 16, 2024

**BRAIN
CUBE[®]**

Why Do Digital Projects Fail?

- Lack of clear objectives and how digital tools support continuous improvement. GU0
- Poor leadership support
- No compelling “why” or change management story
- Company/ plant are not ready for digital adoption
- No cohesive strategy



**BRAIN
CUBE**

Slide 2

GU0 McKinsey or Gartner stat to support.

Guest User, 2024-03-11T17:43:47.949

GJ0 0 I don't have any, do you? I can try to find some though if needed.

Geoffrey Jackson, 2024-03-11T22:51:21.443

GJ0 1 Results proved that the barriers, namely IT infrastructure, lack of cyber physical systems, and improper communication models, are identified as the most dependent barriers, and the barriers of lack of top management commitment and inadequate training are identified as the most driving barriers. This study makes it easier for decision-makers to take the necessary steps to mitigate the barriers. The bottom level of the TISM hierarchy is occupied by barriers that need more attention from top management in order to be effectively monitored and managed.

Geoffrey Jackson, 2024-03-11T22:55:56.102

GJ0 2 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10686847/>

Geoffrey Jackson, 2024-03-11T22:56:07.576

How To Address GU0

- **Lack of clear objectives:**
 - Create clear objects that are not project or implementation based but rather business performance based
 - The tools have no meaning if they don't translate to plant/ company performance
- **Poor Leadership support:**
 - Inspiration alone will not drive adoption
 - Business improvements and tool use to achieve them should be written into all goals
 - No tolerance for using old tools once new ones are in place
 - The purpose of the transformation has to be communicated and real
- **Company/ Plants are not ready for digital adoption:**
 - Digital Maturity is critical to tool adoption
- **No cohesive strategy:**
 - Develop an overall plan that considers the current level of digital maturity and organizational readiness for change



**BRAIN
CUBE**

Slide 3

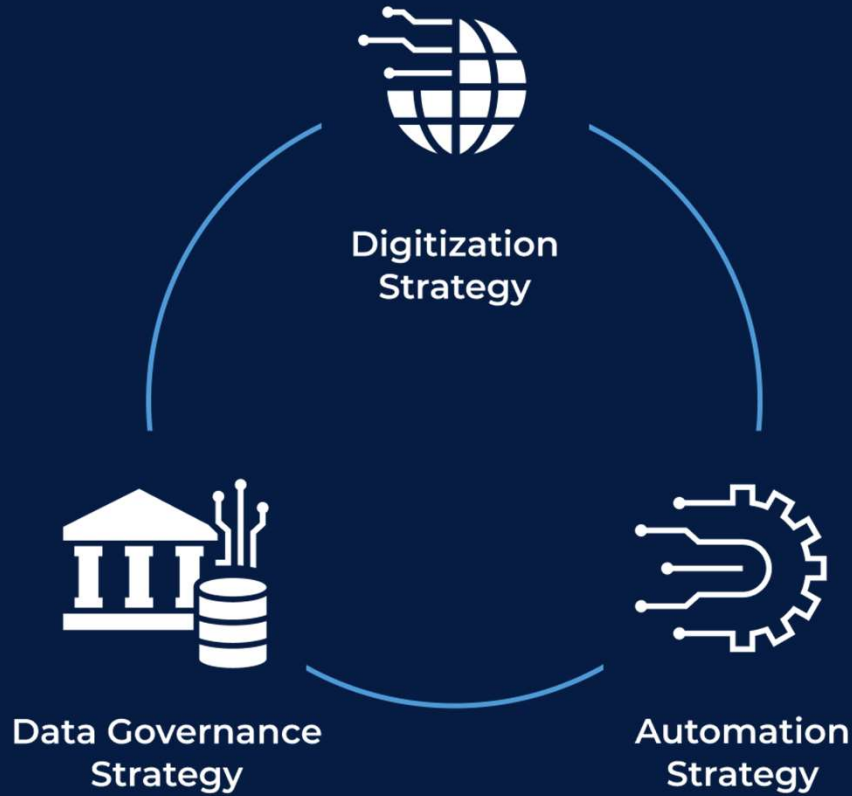
GU0 Consider combining 3+2 and voicing over some of this?

Guest User, 2024-03-11T17:44:38.310

GJ0 0 Done.

Geoffrey Jackson, 2024-03-11T22:57:13.914

Elements of Continuous Improvement Strategy



**BRAIN
CUBE**

But are you ready for the new capability?

Slide 4

GU0 Voicing over what each of these means?

Guest User, 2024-03-11T17:45:41.844

GJ0 0 That is what I was thinking. Basically, an organization should have all of these because only a single one will underperform to expectations.

Geoffrey Jackson, 2024-03-11T22:58:30.176

GJ1 I could easily talk about how BrainCube fits in all three of these. The digital twin is about digitizing the process health, the IOT Edge can also bring together the product, machine, and material health into a single interface. The cross rank, SPC, and charting applications fall into the Data Governance strategy. But someone has to be assigned to actually look at the data. That's on the individual plant/ company to do. If no one is looking at the data or isn't insuring a single source of truth that BrainCube either houses or links to for analysis, then the tool will be under utilized. As far as automation, the charts and live dials absolutely eliminate mundane reporting requirements for both daily and monthly reporting.

Geoffrey Jackson, 2024-03-11T23:03:19.026

GU2 Working on getting these icons

Guest User, 2024-03-25T22:05:04.977

Digital Maturity- What Is It?

A quick and easy way to assess a plant/ company for digital readiness



Manufacturing Excellence

- Lean Tools in use
- Problem solving tools
- Desire for continuous improvement
- Standard work in practice
- Workplace organization (5S) exists
- Leadership accountability is part of company culture

Digital Readiness

- IT/ OT infrastructure in place to handle data needs
- Workforce comfortable in digital space
- Tools are deployed that are relevant to the operation
- Leadership trusts digital world

**BRAIN
CUBE**

Benefits of a Digital Maturity Index



Standard comparison of plants/ office to determine digital readiness

Easy numerical scale for calculation

Simple and quick to complete the assessment

Includes manufacturing excellence as well as digital readiness

**BRAIN
CUBE**

Elements of the Index

Digital Excellence

- Applications
- Data Entry
- Use of mobility

Data Excellence

- Data usage at communication meetings
- Level of process digitization
- Data availability

Manufacturing Excellence

- Culture of continuous improvement
- Tool awareness
- Training

Each is rated on a scale from
0-3
Average score for each
section

Scores:
0- Very low readiness
1- Some data, mostly
manual
2- Tools available, not
widely
operationalized
3- Digitally mature



**BRAIN
CUBE**

The Digital Thread (Digitization Strategy)



Product identification
created which ties all
relevant information
together

Product Health

Determined by visual inspections and testing, conformance to finished good specifications

Process Health

Process setpoints and actual values

Machine Health

Drive/ motor conditions, condition-based monitoring, lifecycle management, utility (compressed air, colling, HTM, etc.) information

Material Health

Captures conformance to RM specifications, storage, handling and usage, physical properties, CofAs, receiving information, usage

When raw material and process traceability extends beyond the receiving dock and through to the end user, issues can be easily identified and properly analyzed using all data.

**BRAIN
CUBE**

Eliminate 3D Tasks (Automation Strategy)



What is a 3D Task? Any task that is:



Dull



Dangerous



Dirty

**BRAIN
CUBE**

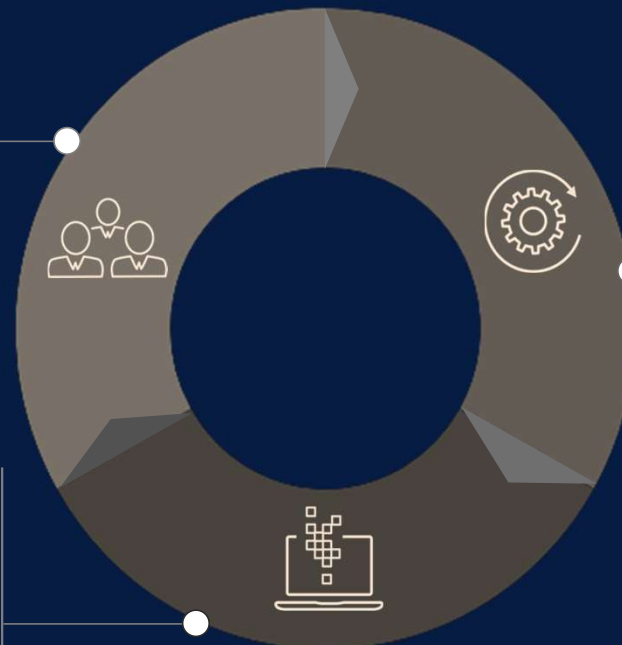
Building World-Class Operations (Data Governance Strategy)

A framework for innovation, sustainment and continuous improvement



People tools

- Skills building/ tracking
- Single user interface
- Dashboards for visualization
- HR-related information
- Action/ idea tracking



Process tools

- MES
- CMMS
- WMS
- Planning
- Purchasing
- HMI/Centerlining
- QA systems

Data generating tools

- QC systems
- Raw material data
- Machine condition monitoring
- EHS information
- Knowledge management
- Financial reporting
- Shipping data

**BRAIN
CUBE**

Multiple Product Generations to Achieve Goal



Connect and Analyze Data/ Data visibility to all

- Apps are connected and accessible through a single, mobile user interface
- Standardize and connect data between plants
- Build roadmap for skills and competencies evolution.

Automate Routine Business Tasks

- Planning/ Scheduling/ Execution are automated with accessibility to all near real time
- Update organizational roles/ responsibilities reflecting new capabilities
- Business rules between systems automated and managed by exception

Machine Learning/ Entire Process Visible

- Fully integrated data visible to all for making strategic and tactical decisions
- Use of VR/ AR and other electronic resources for troubleshooting, training, and other use cases



Slide 11

GU0 What will the talk track/lead in be to slide 12? Will slides 9-11 mention a lead in to Braincube?

Guest User, 2024-03-11T17:52:33.219

GJ0 0 The idea here is that many companies try to do too much all at once. Breaking down the strategy into smaller efforts ensures higher probability of success. I usually use the US space program as the example here (Mercury, Gemini, Apollo). The tie to braincube is that it grows as the organization moves through the stages. Maybe this slide fits better earlier?

Geoffrey Jackson, 2024-03-14T13:13:54.763

GU1 What are the generations in this context?

Guest User, 2024-03-11T17:53:34.518

GJ1 0 Staging of the overall strategy. Each one could stand on its own if the company decided to stop there but the end goal would be to maximize the organizational performance through the latest technology use.

Geoffrey Jackson, 2024-03-14T13:15:18.860

Where Does Braincube Fit in the Stack?



- **Process Health**- Hyperlift capability with cross-rank and correlation capability
- **Centerlining**- Braincube Live used for workstation display of critical process parameters including both direct and calculated variables
- **Process Dashboarding**- Consolidating data from multiple sources to create a single pane of glass for operators, supervisors, engineers, and managers



Slide 12

GU0 Would it be possible to include a slide after this of a specific application you've applied? Predictive maintenance issue that was prevented for example that could be highlighted?

Guest User, 2024-03-11T17:55:25.820

GU0 0 "I actually have done this" kind of example.

Guest User, 2024-03-11T17:56:13.853

GJ0 1 Does the next slide capture what you are thinking?

Geoffrey Jackson, 2024-03-14T14:09:42.622

Examples



Maximo Safety Work Orders

Type	Status	WO#	Description	Date Opened	Days Open
SE	WPLAN	21763248	[REDACTED]	Feb 2, 2024, 10:06 AM	27
SE	WPLAN	21783534	[REDACTED]	Feb 2, 2024, 10:06 AM	27
SP	WAITASGN	21900927	[REDACTED]	Feb 29, 2024, 1:39 PM	0
SP	WAITASGN	21900564	(SF) Plant Safety Showers & Eye Wash Stations Monthly	Feb 29, 2024, 1:37 PM	0
SP	WAITASGN	21899892	(SF)(FPP) Fire Extinguisher Monthly	Feb 29, 2024, 1:33 PM	0
SP	WPLAN	21872796	[REDACTED]	Feb 29, 2024, 8:13 AM	1

Maintenance team requested work order data using Braincube Edge tablets. Decreased average response time by 42%

Included alarms from other machine condition monitoring systems.



Consolidated process data and lab results into single screen for easy comparison. Also includes links to shift forms.

Mighty Lube Alarms

Date	Chain	Status	Alarm	Description
2024-02-29 16:13		No Alarms		No MightyLube alarms.

Augury Machine Health Status

Machine	Status	Date Changed
[REDACTED]	[REDACTED]	[REDACTED]

Maximo Work Orders

Type	Status	WO#	Description	Date Opened	Days Open
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

The improved visibility increased average machine uptime by 38%



How is Adoption Impacted?

- Manufacturing excellent foundation **MUST** come first
 - Leadership/ Accountability
 - Standard work
 - Workplace organization (5S)
- Digital Tools enhance the Continuous Improvement culture
 - If there is no desire to improve or no commitment to use information to make improvements, digital tools will not create that culture
 - More than just a compelling “why”, must have data and system trust
- Build the strategy in bite-sized steps
 - Trying to do too much will dilute the effort and make the change management overly difficult
 - Include Manufacturing Excellence, Data Use/ Governance, and Digital Tools together
 - Ensure the organizational structure changes as the data becomes more readily available
 - Don’t forget about the impact to the people



**BRAIN
CUBE**

Digital Tools give PEOPLE the information THEY need to make better decisions

Accelerating Adoption

- **Rules before Tools:**
Critical that processes (transactional and physical) are standard, reliable, and meet the needs of the business.



**BRAIN
CUBE®**

Accelerating Adoption



- **Rules before Tools:**
Critical that processes (transactional and physical) are standard, reliable, and meet the needs of the business.
- **Human and Digital Infrastructure**
requirements should be understood and designed to handle future data requirements including headcount to operationalize and analyze

**BRAIN
CUBE**

Accelerating Adoption

- **Rules before Tools:** Critical that processes (transactional and physical) are standard, reliable, and meet the needs of the business.
- **Human and Digital Infrastructure** requirements should be understood and designed to handle future data requirements including headcount to operationalize and analyze
- **Priority conflicts** will exist between run the business and technology exploration. Innovation and new tools must be part of running the business, not in competition



**BRAIN
CUBE**

Accelerating Adoption

- **Rules before Tools:** Critical that processes (transactional and physical) are standard, reliable, and meet the needs of the business.
- **Human and Digital Infrastructure** requirements should be understood and designed to handle future data requirements including headcount to operationalize and analyze
- **Priority conflicts** will exist between run the business and technology exploration. Innovation and new tools must be part of running the business, not in competition
- **Cultural Shift to Digital Mindset** from traditional operational philosophy. Change from **Who** to **Where** data exists and **How** to use it to solve problems



**BRAIN
CUBE**

Accelerating Adoption

- **Eliminate the Crutch**–
There comes a time when the old tools/ processes need to be turned off to insure adoption of the new.



**BRAIN
CUBE**

Accelerating Adoption

- **Eliminate the Crutch**– There comes a time when the old tools/ processes need to be turned off to insure adoption of the new.
- **Deploy with the Right Expectations**– The users should know if the application is being launched as an MVP with rapid iterations planned or as a stable product with a longer term roadmap for feature enhancement



Accelerating Adoption

- **Eliminate the Crutch**– There comes a time when the old tools/ processes need to be turned off to insure adoption of the new.
- **Deploy with the Right Expectations**– The users should know if the application is being launched as an MVP with rapid iterations planned or as a stable product with a longer term roadmap for feature enhancement
- **Change Management Plan**– Multi-channel plan which includes hypercare services and a feedback mechanism. When feasible, add environments for feature testing and experimentation



**BRAIN
CUBE**

Accelerating Adoption

- **Eliminate the Crutch**– There comes a time when the old tools/ processes need to be turned off to insure adoption of the new.
- **Deploy with the Right Expectations**– The users should know if the application is being launched as an MVP with rapid iterations planned or as a stable product with a longer term roadmap for feature enhancement
- **Change Management Plan**– Multi-channel plan which includes hypercare services and a feedback mechanism. When feasible, add environments for feature testing and experimentation
- **Know the Digital Maturity**– Not every organization or facility is at the same digital maturity level. It is important to consider the experience and comfort with digital tools in general when selecting sites for deployment.



Jackson
Consulting
Group, LLC

**BRAIN
CUBE**

Questions?

Company website
www.icg-llc.com

LinkedIn Profile
www.linkedin.com/in/geoffrey-jackson-a640b98

Braincube
www.braincube.com



Jackson Consulting Group



**BRAIN
CUBE**