

# Impact of Innovation & Technology on Traditional Business in the Manufacturing Industry

**PERFORMATICA**

STRATEGY · OPERATIONS · TECHNOLOGY · ALLIANCES



**Aug 10<sup>th</sup>, 2023**

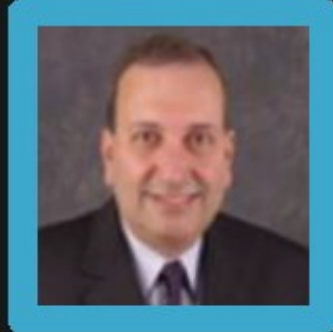
**10:30 AM CST (USA) / 9 PM IST (INDIA)**



**Atul Andy Vir**

Keynote Speaker

CEO, Equator Advanced Appliances



**Dr Darukhanavala**

Panelist

Industry Advisor, Energy & Power, Technology Innovation, Ex-CTO, BP



**John Baumgartner**

Panelist

Industry Advisor, Finance, Energy & Power, Ex- Chief of Staff, CTO, BP



**M Krishna**

Panelist

Industry Leader, Lean & Six Sigma, Manufacturing, Automobiles & Technology



Section	Topic	Speaker/s
Introduction	On Performatica and The Key Topic	Murthy Divakaruni
Industry Insights	Insights on Future Technologies	Dr Darukhanavala
Keynote	Impact of Innovation and Technology on Traditional Business in the Manufacturing Industry	Atul Andy Vir
Panel Discussion (Moderator)	Discussion and Q&As	John Baumgartner & All Panelists
Key Takeaways	Future Outcomes	M Krishna

# Energy | Manufacturing | Utilities



Members from consulting, technology and operations provide an **all-inclusive perspective at an engagement level**

Consulting+ Technology solutions team from Fortune 500 and Tier I IT/ITES Firms



**Design thinking and Change Management** at the core of any proposed solution



Leveraging **low-code/no-code platforms for MVPs** as part of our engagements

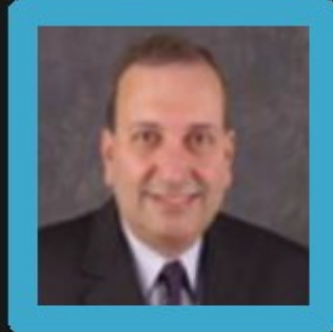




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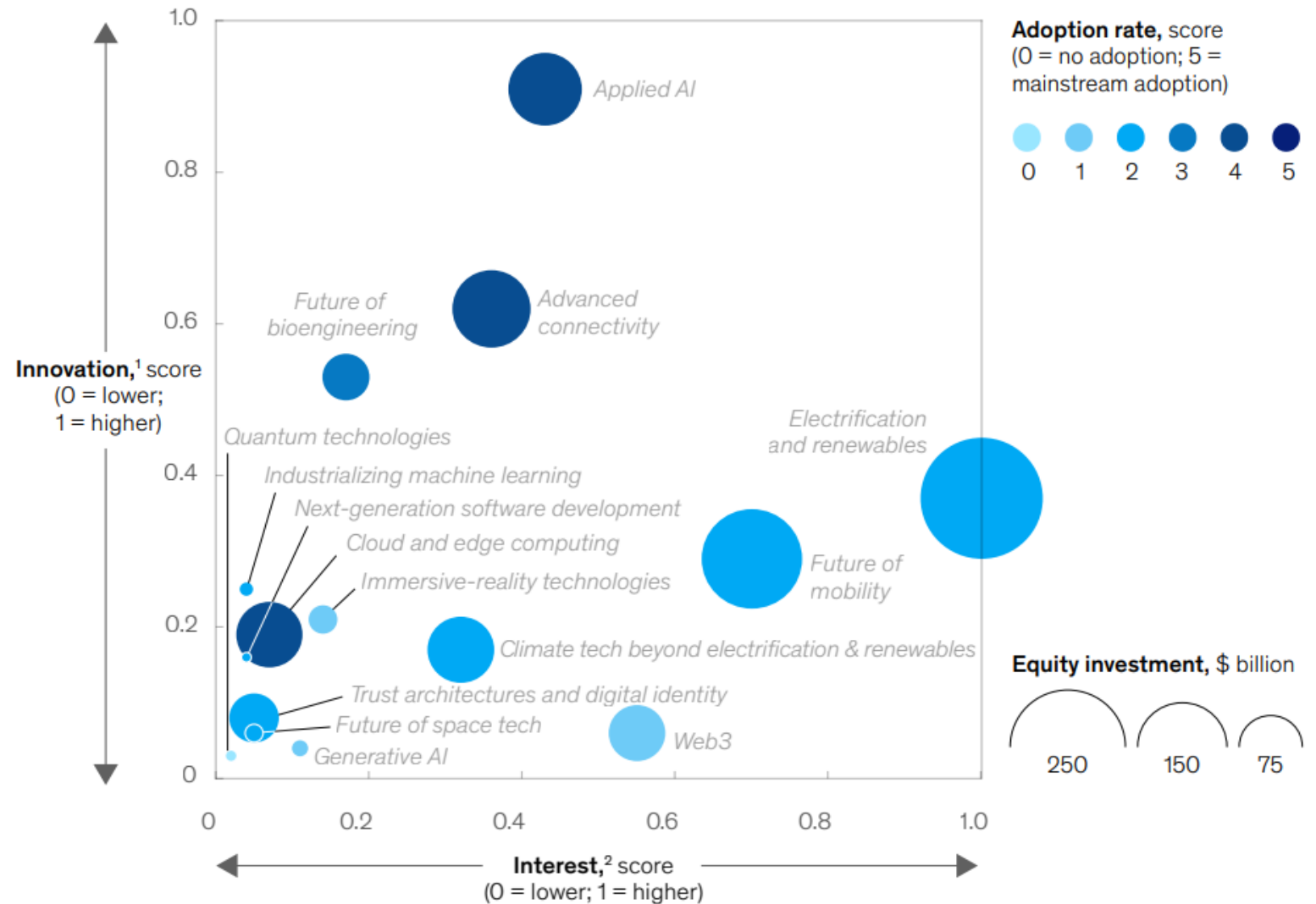


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# The 15 tech trends

from McKinsey & Company

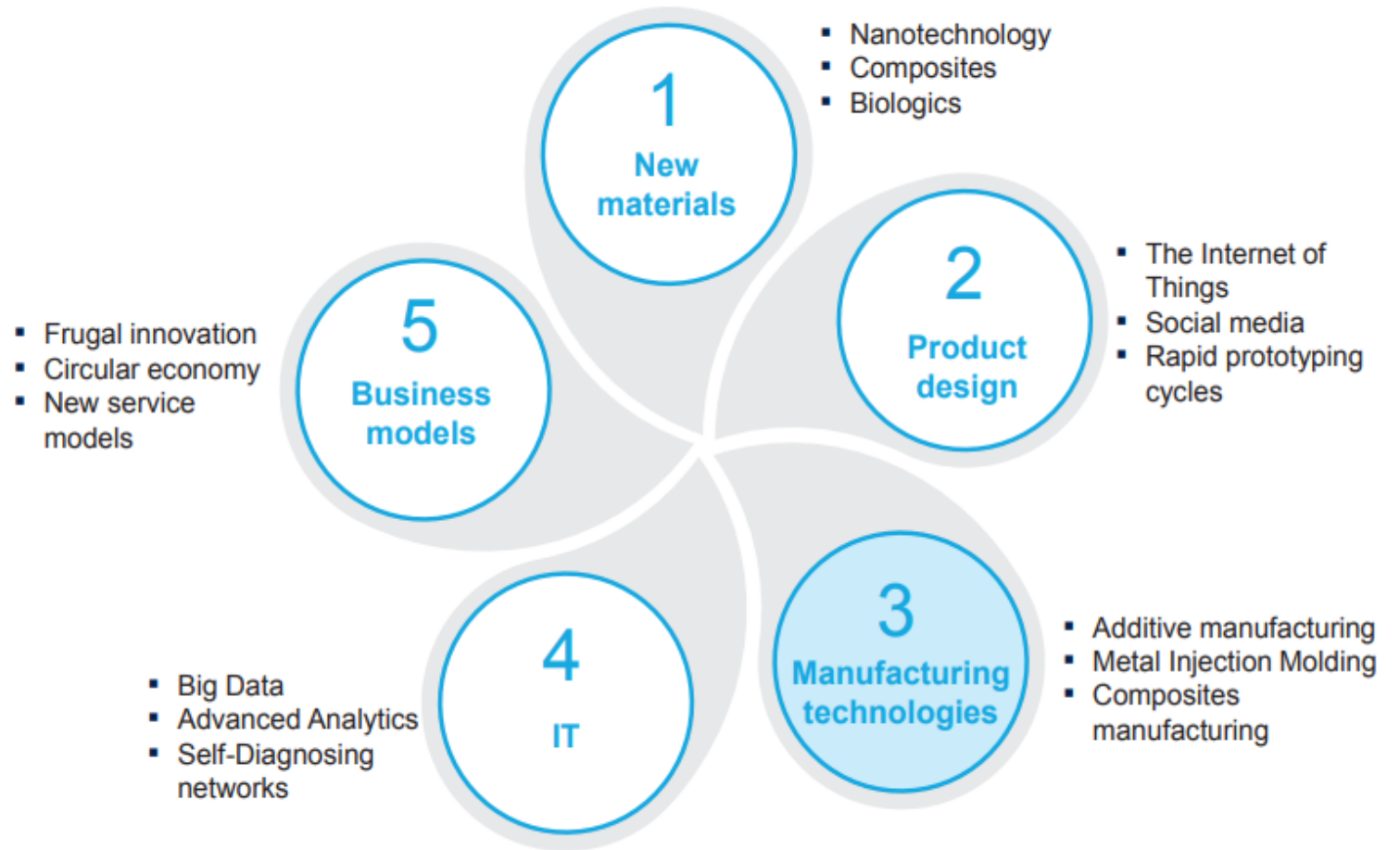
Innovation, interest, investment, & adoption, by technology trend, 2022



# Factory of the Future

from McKinsey & Company

## 5 trends of rapid change in manufacturing

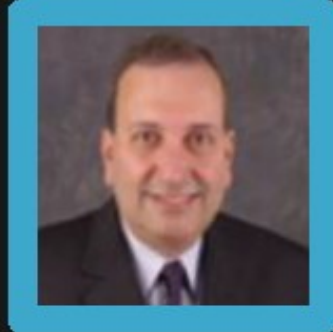




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## INNOVATION IN THE **WASHING MACHINE INDUSTRY** IMPACT OF **ARTIFICIAL INTELLIGENCE**

**Atul Vir** has been **Entrepreneur of the Year** (by the Indo-American Chamber of Commerce) and Our company: Equator Advanced Appliances has been **ranked 3 times** in the **Houston 100 List of Fastest Growing Companies**. He will share his experience and talk about innovation in the **Washing Machine industry** and how he led his team to upgrade their **Artificial Intelligence (AI) and Machine Learning (ML) technological skills**.

August 10, 2023  
10:30 AM CT



**ATUL ANDY VIR**  
KEYNOTE SPEAKER

[www.EquatorAppliances.com](http://www.EquatorAppliances.com)





**Innovation** is **Solving a Problem**

**If you have a problem  
Find a solution**

**If it can be marketed at a fair price  
And make a profit**

**You have a Business**



1991

The Journey begins..

Equator's First Product - Combo Washer-Dryer



## Problem



Transfer clothes from washer to dryer

## Solution



All-in-One Combo

# Push Pull Marketing Strategy



## FORTUNE

### PRODUCTS TO WATCH

BY WILTON WOODS

#### COMPACT WASHER-DRYER

If you've ever envied a European friend's compact washer-dryer lodged snugly in a closet, envy no more: saving, all-in-one machines are now available imported by Equator Corp. of Houston. Built by Italian appliance maker, the EZ 1000 is a 110-volt, 220-volt units standard in Europe. It's aimed at the market of singles, couples, and the elderly in apartments, not at suburban married-with-kid households. The front-loading machine is thrifty with water, but saving less space than a standard washer-dryer. The compact is smaller than a typical dryer. Just wash and dry your jeans into it in one washing-drying cycle.



using the conventional pair of machines, but you don't have to hang around for the washer to finish, then transfer the load to the dryer. When you clean and dry laundry is waiting. The units are on sale at some discount stores in Texas and elsewhere (935-1565). Suggested retail price: \$795.

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# THE WALL STREET JOURNAL

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FRIDAY, MARCH 17, 2000

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WSJ.com

## Houston Chronicle

Saturday, June 22, 2002 Houston Chronicle \*\* 9D

### ARTS & CHRONICLE

#### IT'S GOOD TO BE COOL

Pitch that plastic ice chest. Houston-based Equator Appliances offers a stylish alternative with its Equator PartyCooler. The contemporary-styled coolers, which come in royal blue, black,

April 2003

# Appliance

Serving the Appliance Industry Worldwide

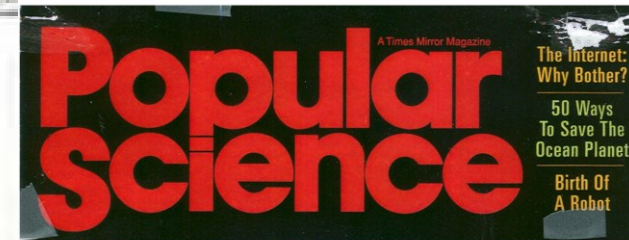
### People



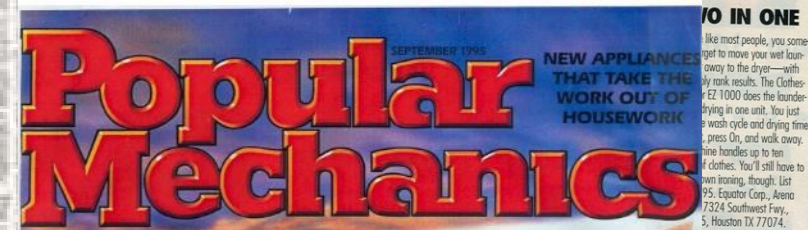
#### Atul Vir of Equator Corporation

Atul Vir thrives on a challenge. "I like to feel the adrenaline flowing in the hunt, the chase of achieving a goal, and the satisfaction of knowing that the objectives have been met." He is currently the vice president of Equator Corporation.

shipping delays, port strikes, slow sales. My daily strategy is to expect change. Nothing is taken for granted. By expecting it, I am ready for the challenge. Mental preparation is the key." While he considers himself a "inside out" and "not if done, now" type of



### WHAT'S NEW



#### Two For One

This combination clothes washer-dryer takes up about the same space as a dishwasher. The EZ1000 accepts a 10-pound load of clothes and uses a perforated stainless-steel drum to wash in a rocking motion. It spins water out of the load at 800 rpm, and begins drying automatically. The manufacturer says the machine is essentially vibration-free because the drum is mounted on springs and shock absorbers. It provides five wash cycles and five temperatures for the wash/rinse water. A fitting is included that allows the appliance to be hooked to a kitchen or utility-sink faucet. It costs \$895 at department and appliance stores, and can be shipped directly for about \$50. Contact Equator Corp., Arena Tower II, Suite 805, 7324 Southwest Fwy., Houston, TX 77074.



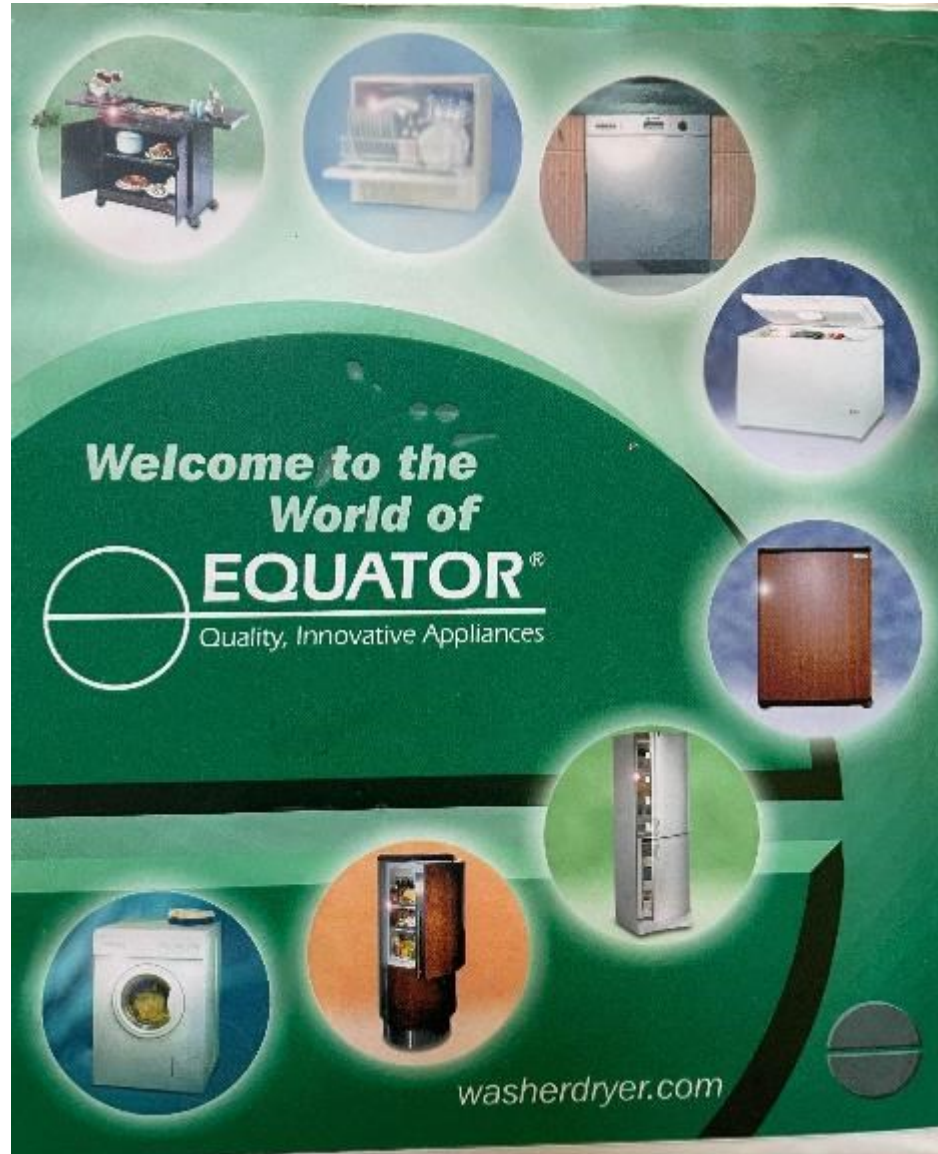
POPULAR MECHANICS • SEPTEMBER 1995

# Awards



# European Product Range (Pre 2005)

**Buffet Cart - UK**



**Table Top Dishwasher - Greece**

**Standard Dishwasher - Spain**

**Freezer - Denmark**

**Hotel Refrigerator - Turkey**

**Tall Refrigerator - Denmark**

**Washing Machine - Italy**

**Round Refrigerator - Germany**

# Equator World Headquarters

Beltway 8, Houston



# Equator Joint Venture - China



# Factory and Production





# Theory of Problem Solving

**1.Convertible Vented / Ventless:** Flexible to use in both places

**2.Sanitize:** Works against germs and viruses like Covid

**3.Allergen:** Removes allergy causing germs, pollen, dust etc

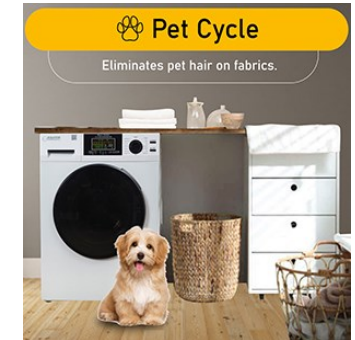
**4.Bed bug cycle:** Kills disease causing bedbugs

**5.Anti Bacterial Baffles:** Prevents growth of bacteria inside the drum

**6.Pet Cycle:** Eliminates pet hairs from clothes

**1.Quiet cycle:** Solves hassle to children and elders

**2.Advanced Suspension Control:** Helps in Bumps and yaws in RVs



# Equator India



## **CHALLENGES**

**Power**

**Water**

**Weight**

**Dust**

**Gravity**

**Cabinet Opening**

**RPM/Polyester**

**Microplastics**

**Vibration**

**Easy to repair**

**Mold in door**

**Sanitize**

## **Artemis Basecamp Lunar Habitat**



### **All-in-One Combo**



# AI in Equator Processes

# My First experience with AI - Love Letter

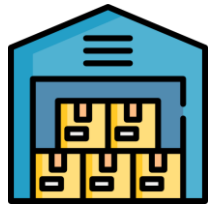


**AI**

## Logistics and Supply chain management



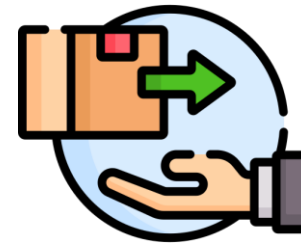
Automated warehouse operations



Real time Shipment Tracking



Demand Forecasting



Dynamic Pricing



# AI

## IT and Marketing



Content Improvement



Ad Optimization



Software Enhancement



IOT

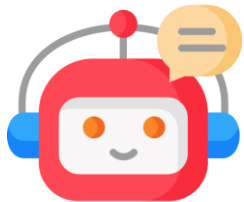


**AI**

## Customer Service



Chatbots



Analytics



Problem  
Detection



Customer  
Experience





**AI**

**Sales**



Competitor Analysis



Price Optimization



Forecasting

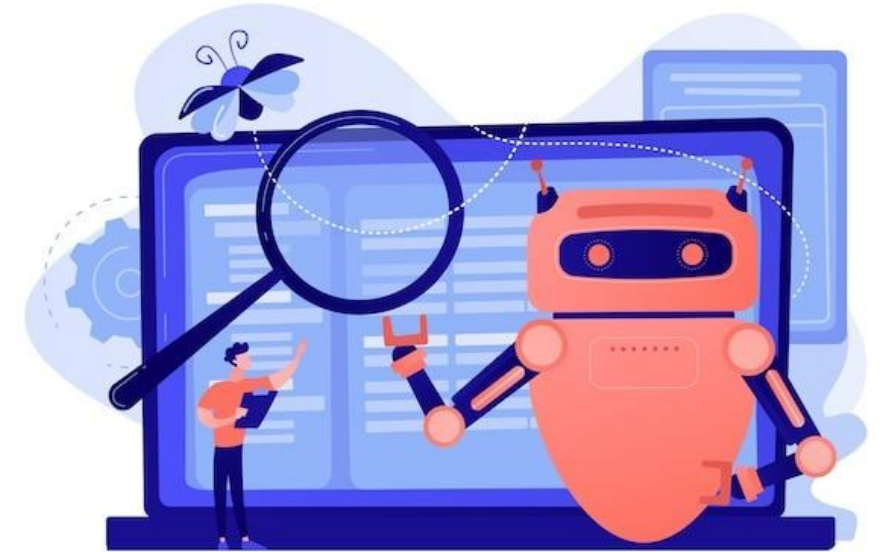


Market Trends



# AI Tech in Equator Manufacturing

1. High efficiency
2. Cost reduction and high quality guarantee
3. Reduce waste and pollution
4. Green and Sustainability
5. Smart and flexible manufacturing :Robot , CNC
6. New product design, innovation
7. Production forecasting
8. Safety
9. Smart logistics management



# AI Tech in Laundry Products

1. **Smart controls** : Sensor, smart programs , PCB, microprocessor, automatic detergent, auto water level.
  
1. **Voice Control**: Start , Pause, Fill water.
  
1. **Advantages of Photo identification**:
  - a. Intelligent
  - b. Energy-saving
  - c. friendly Environment
  - d. Time-saving
  - e. Quality of Life
  - f. Clothes more clean, tidy
  - g. More time with family



## Use of ChatGPT in company tasks:

1. Content Writing
1. Social media planning
1. IT Solutions
2. Demographic analysis
3. PR and Advertising



# AI Chatbot for Customer Support

**1.24/7 Availability**

**2.Quick Response Times**

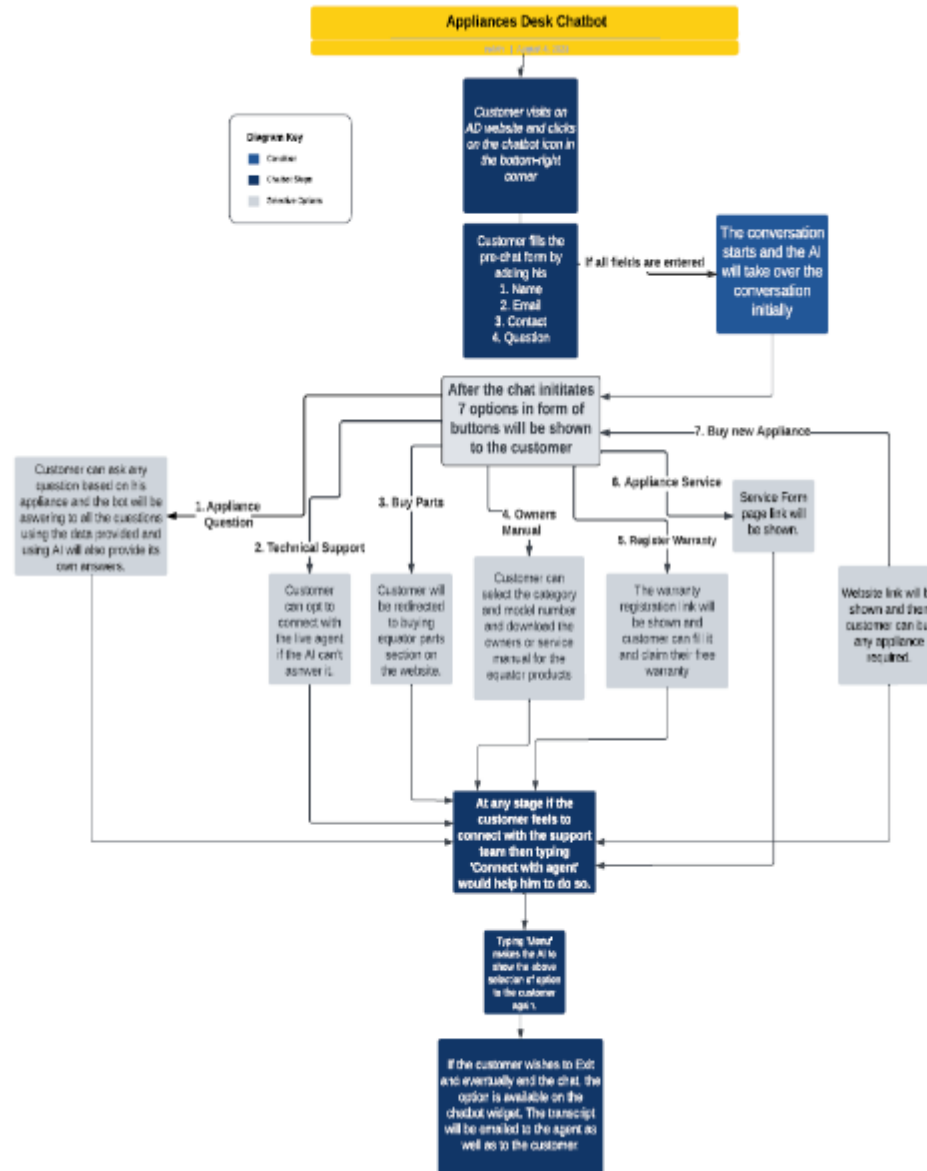
**3.Cost-Efficiency**

**4.Data Collection and Analysis**

**5.Scalability**



# AI Chatbot for Customer Support



# **FUTURE**

## **Equator's Collaboration with Colleges**

- 1.Solving Real-World Problems**
- 2.Fostering Entrepreneurship**
- 3.Advancing Technology**
- 4.Learning through Hands-on Experience**
- 5.Building Collaborative Networks**



# **CONCLUSION**

## **Use of human intelligence**

- 1. Decision-making**
- 2. Design/Innovation**
- 3. Art**
- 4. Genuine social interaction**



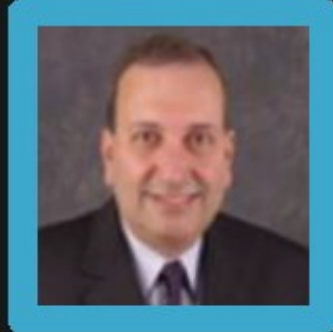




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# Panel Discussion and Q&As

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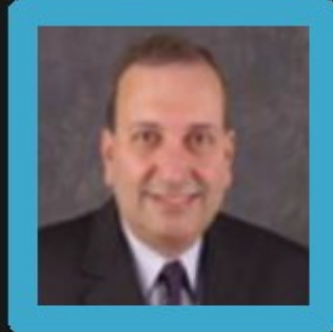
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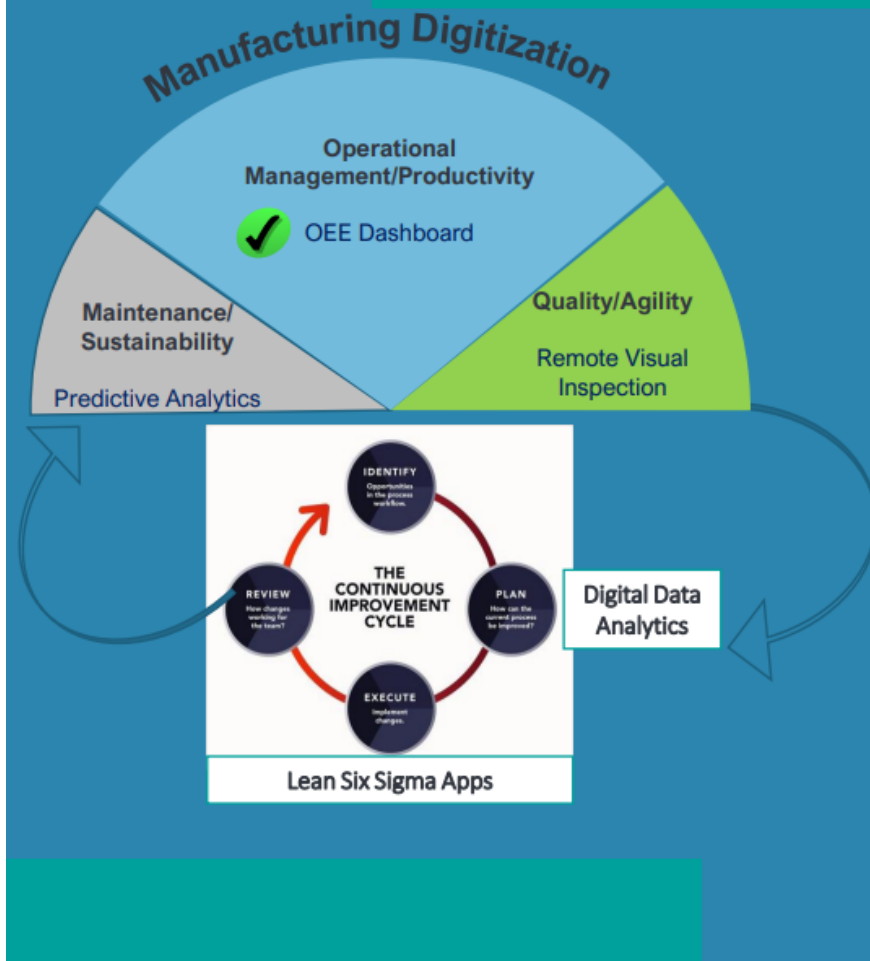
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# Driving Operational Efficiency

## Productivity



## Monitoring & Prediction of OEE (Overall Equipment Effectiveness)

Solution is built on Microsoft PowerApps which helps in instant visualization as well as predictive analysis of production runs at customized intervals.

- ✓ The real-time dashboard shows availability, quality, and productivity by - Machine, Product, Order, Shift, and Operator
- ✓ Solution supports for OEE analytics – for trends/outliers, forecasts by Machine, Product, Order, Shift, and Operator between any production period.
- ✓ Solution also supports for MT Connect application using Agents to analyze machine/component health status.
- ✓ We also assist in floor improvement projects using tools such as Six Sigma, Lean and TOC

# Driving Operational Efficiency

## Maintenance



## Predictive Maintenance APA (Asset Performance Analyzer)

Solution is built on a Sandbox model using IBM Watson for asset performance analysis - for Asset Health Prediction (e.g., ESP, BOP, Boiler, Flowlines, Pipelines, Drill bits, Pipelines, etc.)

- The solution supports a customized ESP Data Template on top of the ESP- RIFTS Dataset
- Generates Asset Health prediction reports at regular intervals, leverages notification engine for E-mail/SMS for the possible failures, support Forecasting/Trends for next 72 hrs. (Planned vs Actuals last 24 hrs.)
- Solution also supports for What-If Analysis, Reliability Analysis, Mean Time to Failure (MTTF) Prediction, Failure Distribution.

# Driving Operational Efficiency

## Quality



## Operational Management - Quality RVI (Remote Visual Inspection)

Solution is built using an open-source computer vision platform to perform remote inspections and detect deviation from specifications (as defects) during production.

- Defects detection using CNN (Convolution Neural Networks)
- App-based streaming on inspected items is shared in real-time to the QC team at production site
- Solution also supports for 3D and AR (Augmented Reality) models

# Thank You



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