

# 2019 DIGITAL FUTURES

## Conference Highlights

10/17/2019

Key takeaways to share with your organization – *captured by Case Western Reserve University students\**

\* Note: Due to the limited number of students, highlights could not be captured for all sessions.



All slides that have been provided by speakers are available [here](#). Video will be available shortly.

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# The Digital First Maturity Framework

Youngjin Yoo, Case Western Reserve University

## Session Summary

- Legacy companies have an opportunity to convert bits and software to physical touchpoints with customers
- Digital innovation is not all about technology, it's about value creation and value capture as well.
- Case Western Reserve University has developed a Digital Assessment which, among other things, will serve as the framework for the conference.

## The Digital First Maturity Framework – Page 2

Youngjin Yoo, Case Western Reserve University

### Steps of Digital First assessment

- **Value Creation:** Do your products rely on physical resources to create value or on features and functions?
- **Digital Enabler:** Off-line vs online. Are you constantly monitoring and understanding the users, then interacting based on algorithms?
- **Digital Innovation:** Products are smarter and constantly adapt to user needs.
- **Digital Operation:** Products are no longer just the physical product; they are the abstract ideas that can become realized as digital or physical.
- **Digital Organization:** Users and buyers are not always the same. User process and journey look similar but are completely different.
- **Digital Talents:** This requires mindset (why) and skills (how). Train people to interact with new digital technologies (combine knowledge and digital skills)
- **Digital Partnership:** Who will help you? You may want to have competitors join your platform. Your answer determines the scope and size of your platform.
- **Digital Strategy:** Various options: Recurrent value loop: a physical product enables a way to sell a service. High performing technology allows for constant adaptation and reliable service. Incorporate context gained from real-time user insights;
- **Digital Leadership:** Does your firm have a clearly identified executive leadership and a coherent roadmap for Digital First strategy?



# Digital Strategy

**Keynote: Why Digital Strategies Fail – Page 1**  
**Anand Swaminathan, McKinsey & Company**

## Session Summary

Session focuses on why digital does not work in certain situations, companies, scenarios

What percent of your company's revenues do you think are at risk by 2020 due to digital if you stay on your current course?

Companies are struggling to know how to capture value from digital investments

## Two definitions of digital

1. Economic value (myth)
  - Instant, perfect, free replication of digital assets, changes the economy
2. Operational value
  - How do we think about improving processes?
  - Analytics: how do you leverage data?
  - New ways of operating - what is your next business model?

Digital is a “winner take all mentality”

- First movers will have the best chance of winning, but fast followers are also relevant



# Digital Strategy

**Keynote: Why Digital Strategies Fail – Page 2**  
**Anand Swaminathan, McKinsey & Company**

## Reasons why traditional strategies fail in a digital age

1. Fuzzy definitions
  - Digital doesn't just mean IT or digital marketing. It's how your overall portfolio of businesses will continue to make money in the digital age
2. Misunderstanding the economics of digital
  - Digital transfers disproportionate economic value to customers, shrinking the overall economic pie for incumbents across most sectors at the same time
  - Digital is shifting more value to consumers, and destroying some value entirely
  - E.g. value disruption
    - Spotify, has millions of songs, Netflix has thousands of movies, Amazon has next day shipping, all through subscription model
3. Overlooking ecosystems
  - Unlike 10 years ago, all 5 of the largest companies by market cap today are “ecosystem” players
  - We tend to create to use each other's ecosystem, rather than being the center of your own
  - Value chain will heavily shift to ecosystem revenue rather than individually owned revenue



# Digital Strategy

**Keynote: Why Digital Strategies Fail – Page 3**  
**Anand Swaminathan, McKinsey & Company**

## 4. Missing the duality of digital

- Incumbents can't choose between transforming the core or innovating new business models
- Companies aren't deciding whether to reinvent their core or focus on new digital businesses - they are focusing on how to do both simultaneously

## What are the winners actually doing?

- Takes a digital native mindset, approach things from a different way
- Most successful digital companies are open sourced companies
- Speed is important, digital natives have no fear in failing fast
- Incumbents use digital to enter new sectors

## First steps to becoming a 'digital reinventor'

- Entire top team must engage and own digital
- Reframe the strategic questions
- Be bold, fast and agile in placing your bets and resourcing them
- Take a dual approach to digitization

## Additional Materials

- McKinsey Article: [Why Digital Strategies Fail](#)
- [McKinsey YouTube Video](#)



# Digital Innovation Process

## Discussion Panel – Page 1

Alex Foessel, John Deere; Erin Spring, Goodyear Tire & Rubber; Betsy Bolman, Case Western Reserve University; Marguerite Johnson, Leggett & Platt Automotive

### Session Summary

*How are your digital innovation processes mission critical to endeavors?*

**Foessel:** Sustainability with customers directly relies on the performance of the solution provided by John Deere.

**Bolman:** Scanning of the art today preserves it for the future.

**Foessel:** Parallel with soil and conservation.

**Spring:** Remaining relevant in an environment of digital native customers.

**Bolman:** Digital interdisciplinary projects are the parallel to remaining relevant in academia.

*How do you digitally enable something individuals or customers already think they are familiar with?*

**Foessel:** Begin collecting data to be formatted to be usable. EG: compactness of soil with tire sensors. Must collect enough data to lead the way on new insights.

**Spring:** When you're not measuring, you don't really know how it's behaving. Rapid learning by customers and the providers of technology.

*What are some new but unexpected user experiences?*

**Foessel:** What are the workflow and decisions of the customers? You must hypothesize, test, analyze and repeat.

**Spring:** How do you follow the customer experience?



# Digital Innovation Process

## Discussion Panel – Page 2

Alex Foessel, John Deere; Erin Spring, Goodyear Tire & Rubber; Betsy Bolman, Case Western Reserve University; Marguerite Johnson, Leggett & Platt Automotive

*What new opportunities have arisen?*

**Bolman:** Optimal profilometry is 1/5 collaborative projects. Use image recognition to scan works of art and ask big data questions of paintings.

**Foessel:** Trustworthiness of digital solutions creates value but comes with risks

*What about the development of new user experiences with overlapping technologies?*

**Spring:** Automated and predictive user experience

*At what point can you “flex” your innovation process to prevent the problem of current unknowns?*

**Foessel:** “We don’t practice agile, we ARE agile.” Robustness comes through being agile.

**Bolman:** Hostility against change and duplication of artwork.

**Spring:** Response to customer. Trustworthiness and transparency with respect to reacting to unknowns is critical to company-customer relationships.

*How is digital impacting innovation?*

**Spring:** Goodyear Innovation Challenge@ Case Western. Stems from day-to-day experiences of users.

**Bolman:** CMA open-access photographs. Need more to address.

**Foessel:** Scalability of collaboration.



# Digital Operations

Discussion Panel – Page 1

J.F. Barthelemy, NASA Langley Research Center; Socka Suppiah, Saggerza; Dinakar Deshmukh, GE Aviation

Moderated by Lee Ann Cochran, Amphora Consulting

## GE's Digital Transformation Journey

- Started 10-12 years ago. GE Aviation makes jet engines. GE saw that jet engines in other parts of the world were failing before expected, which was causing major problems for customers.
- As they brought in analytics and statistics, they found that the engines were not being operated as expected. Customers can now use a digital application or manual inspection. This automated application then spread throughout the organization.

## Saggerza's Digital Transformation journey

- Developed a methodology to identify how to better collaborate. This process identified a digital platform that was then developed and deployed throughout the company. As a result, they saw productivity improvements
- From a customer perspective, they worked with a furniture company to make data available for distributors and customers. They were able to detect fraud at the store level.

## NASA's Digital Transformation Journey

- About 2 years ago, NASA started examining their progress in digital transformation.
- They discovered broad efforts at digital transformation, but the solutions were siloed. The solutions were re-created many times in many different areas.



# Digital Operations

Discussion Panel – Page 2

J.F. Barthelemy, NASA Langley Research Center; Socka Suppiah, Saggezza; Dinakar Deshmukh, GE Aviation

Moderated by Lee Ann Cochran, Amphora Consulting

## *Challenges with digital transformation*

**GE:** Translating POC to production systems is difficult. It is a challenge to ensure that leaders understand a POC is just that, and that changes need to be made before production.

**Saggezza:** The biggest challenge is behavioral. The organization must be empowered to make decisions

**NASA:** There is a tendency for technologists to push a technology. They need to love the problem and not the solution. NASA is a mission agency. Need to be deliberate in terms of where innovation is introduced so that there is a demonstrable ROI on the mission.

## *How can companies start?*

**GE:** Starting by democratizing the data. How can the data be centrally located? How can the employees be skilled up so that they can access and analyze the data? Now that people can access the data, they are running with it and arriving at interesting insights.

**Saggezza:** Start small, and quickly implement wins to get buy-in throughout the organization. Wins release funds.

**NASA:** Companies should look at their critical missions and start by making an impact in those areas. NASA has developed 6 explicit roadmaps, and they are focusing on those as a first effort.



# Digital Value Creation

Plenary Session– Page 1

Tom Culver and Jason Norman, RTI Innovation Advisors

IRI has commissioned RTI to complete six Case Studies:

- Each case will explore aspects of digital transformation
  - Impetus: Change drivers that led a company to contemplate and pursue a digital transformation.
  - Preparation: The specific initial steps taken to set the stage for and embark upon the digital transformation.
  - Action: The kinds of action taken across the key aspects or “lenses” as the company’s digital transformation progressed.
  - Maintenance: Lessons learned and continuing actions to sustain the transformation.
- Each lens provides focus on a critical aspect of Digital Transformation

Michelin

- Intentionally looked forward 50 years to adapt to the digital age ahead of everyone else
- Hired and created a chief digital officer role
- CDO advocated for a short, flexible 3-year strategy because technology is changing so fast. Competitors will also have strategies, but their implementation is what will set them apart.
- Structure, IT department is in parallel, not ivory tower

# Digital Value Creation

Plenary Session – Page 2

Tom Culver and Jason Norman, RTI Innovation Advisors

## Michelin (cont.)

- Focus on building internal talent. Digital talent went from 6-600 in 4 years. Over 70% of digital factory staff were external hires with specific digital experience and competencies.
- Culture shift and transformation was intentional, find the people who are not resistant to change instead of trying to argue with those who refuse to change. Also be very intentional on creating incentives.
- Early digital experiments did not require IT support. Develop capabilities alongside IT, not through IT.
- Operations and offerings: Keep a clear idea of the context. Why should customers want to use your app?

Digital transformation will impact and change core structures, operations, and process, and such changes will take time.



# Digital Partnerships

1. Jennifer Thomas, Plug & Play Cleveland; Sarah Mihalik, UH Ventures; Sarah Stamp, Cleveland Clinic – *slides available*
2. Creighton Warren, USG Corporation – *slides available*
3. Cosmin Laslau, Lux Research – *Highlights not captured; slides available*

## Interactive Breakout Session

### Digital Partnerships Panel Discussion – Page 1

Jennifer Thomas, Plug & Play Cleveland; Sarah Mihalik, UH Ventures; Sarah Stamp, Cleveland Clinic

#### Session Summary

This panel provides examples of successful partnerships. Plug and Play serves an important role in connecting startups with corporate innovation and venture capital.

#### *Why is there a heightened need for speed of innovation?*

**Mihalik:** Payers are forcing healthcare organizations to streamline delivery of care and provide more accessible care, primarily at home

**Stamp:** There is a desire to know the consumer patients want access to healthcare where they are comfortable, which is usually at home.

#### *How do you learn?*

**Stamp:** We learn by making mistakes. We used to bring in many prospective companies across many different opportunity areas. It is important to understand priorities, and where disruption needs to occur. We focus on those areas in order to enact change quickly. These groups have immediate needs and resources to make it happen.

**Mihalik:** We look at the risk of not advancing innovation. We look at the results that they need to drive. Without a clear understanding of the value driver, they can't clearly budget more money and time.

## Interactive Breakout Session

### Digital Partnerships Panel Discussion – Page 2

Jennifer Thomas, Plug & Play Cleveland; Sarah Mihalik, UH Ventures; Sarah Stamp, Cleveland Clinic

*How do you deal with staffing?*

**Stamp:** We narrow down to 3 core people that generate interest. 50 people that have relationships with the institutes and are boundary spanners.

*What about working with Start-ups on pilots?*

**Mihalik:** Cultivating clear champions is essential for pilots. You also need to understand how to gauge value and set expectations.

**Stamp:** Gyant is a chatbot for asynchronous engagement with patients. It took 6 months to get to pilot because there was a need to speak to all interested stakeholders including the legal team.

• *How has this work changed the culture of the organization?*

• **Stamp:** We look at disruption to enhance the patient experience. We want to double the number patients that can be seen, so virtual interaction and care will be the focus of many of the institutes. Healthcare has been reluctant to embrace this because of the importance of human interaction.

• *What is the role of innovation in medical care?*

• **Mihalik:** CVS partnered with Aetna to target Medicare Advantage customers through Health Hub. The vision is to extend care and make it more accessible. Healthcare is generally a local business because of trust issues; however, customers are becoming more accustomed to digital on-demand delivery. The Mission is to teach, heal, and discover.

• **Stamp:** 10% of hospitals will be gone within the next few years. Innovation is the way to compete.



## Interactive Breakout Session

### Digital Partnerships – Page 1 Creighton Warren, USG Corporation

#### Partnerships in the Digital First framework

- Digital partnerships are a leadership imperative for USG because partnerships complete the customer journey
- To obtain and foster the right partnerships requires formal and informal leadership that is aligned with the corporate strategy

#### USG Strategy

- Strengthen operations and customer relationships
- 3 strategic pillars
  - Drive cost and service provision
  - Customer satisfaction
  - Optimize existing and enable new business opportunities
- IT supports the strategy

#### Partnerships are key

- Internal partners - digital innovation is a cross-functional endeavor. These partnerships should be built first, or in parallel, with the building of external partnerships.

## Interactive Breakout Session

### Digital Partnerships – Page 2 Creighton Warren, USG Corporation

#### USG Digital Innovation framework

- Operational excellence and digital workplace - raising the average digital IQ. focus on efficiency and employee engagement.
- Customer experience - customer satisfaction and electronic integration.
- Digital ecosystems - support home or buildings through interconnectedness and emerging channels.
- Smart, connected products - new revenue sources and models, as well as a # of connected products.
- This is supported through a digital-ready infrastructure

#### External partners in the USG space may be different than traditional partnerships

- Smaller partners may have niche, complimentary technical skills
- The company's digital infrastructure is continuously evolving. There is now a team focused on analytics.
- Partners offer a continuum from learning about the opportunities to actually delivering on the possibilities
- One of USG's innovative products is an acoustical tile. Customers can hear the difference between the USG product and traditional products through their web site.
- USG developed tools for architects that allows them to select USG materials earlier in the selection cycle. Provides recommended strategies to architects, which allows USG to become a trusted advisor.

#### Are there partnerships where USG might have exposure, or where USG might share data and wants to guarantee its safety?

- The deal structures identify how IP is protected and was critical through the acquisition.
- This is a corporate governance process



## Interactive Breakout Session

### Digital Partnerships – Page 3 Creighton Warren, USG Corporation

#### How does USG evaluate small companies in this space?

- Stay in contact with the companies so they can watch the evolution
- References - which references the companies provided, and the references that they didn't provide
- Run a small pilot together before undertaking riskier initiatives
- USG provides references for companies that do well

#### How did USG leverage partners to demonstrate that initiatives can be accomplished at digital pace?

- 7-8 years ago, USG rolled out Salesforce. Sales people saw how quickly the IT organization could get the tool into their hands
- Sprint cycles that show incremental delivery of promised technology also help to change internal expectations

#### How do you know what smart products are needed by the market?

- Classic portfolio management and developing customer journey maps

#### Closing thoughts

- Digital partnerships are an imperative
- Should align with strategy
- Must build and align internal and external partnerships



# Digital Organizing

1. Shawn Horner, Parker Hannifin Corporation – *Highlights not captured; slides available, video coming soon*
2. Moisés Noreña and Michael Poloha, Moen – *Slides not available*
3. Geoff Waite, Rob Mettler, and Jamison Roof, PA – *Slides available*

## Interactive Breakout Session

### Digital Organizing – Page 1

Moisés Noreña and Michael Poloha, Fortune Brands Home and Security (Moen)

#### Stage 1: Purely mechanical

- Digitization
- Digital value creation
- Digital value pursue

#### Innovation: frame → generate → embed

##### 1. Frame

Moen: water brand

##### 2. Generate :

- design strategy
- lean start up

##### 3. Embed :

- Build new team
- Integrate into strategy
- Build management systems
- Strengthen our culture

## Interactive Breakout Session

### Digital Organizing – Page 2

#### Moisés Noreña and Michael Poloha, Fortune Brands Home and Security (Moen)

##### Stage 2: Incorporation of electronics

- Digitization: integration of electromechanical parts
- Digital value creation
- Digital value capture
- Digital capabilities

##### Stage 3: Connected Product : Internet of Things

- Digitization : Integration of connectivity into traditional faucet platforms
- Digital Value Creation : Improved consumer experience, meeting consumers digital ways of life
- Digital Value Capture: Price premium, transition from mechanical to connected
- Digital Capabilities: Identifying/managing outside capabilities, complex supply chain, Wi-Fi/app troubleshooting, plumber install/ consumer setup

## Interactive Breakout Session

### Digital Organizing – Page 3

#### Moisés Noreña and Michael Poloha, Fortune Brands Home and Security (Moen)

##### Stage 4: Multi-Integration : Smart home

- Digitization: Integration of products that are not fully developed/ controlled by Moen
- Digital Value Creation : Full integration with consumer's connected lifestyle
- Digital Value Capture: Premium price points, subscription as a service model, Big data
- Digital Capabilities: Outside partnerships, Data management, advanced call center support, category awareness, plumber training

##### Stage 5: Ecosystem integration : Whole home ecosystem

- Digitization: full integration of mechanical, electronic and smart products, in-house build partners
- Digital Value Creation: Transaction within the ecosystem, overall water experience in home
- Digital value capture: lifetime value of consumers, app engagement
- Digital Capabilities: Every team has some involvement

## Interactive Breakout Session

### Digital Organizing Panel Discussion – Page 1

Geoff Waite, Rob Mettler, and Jamison Roof, PA

Research sees 1/6 of all companies become obsolete if they do not adapt to the new digital age.

#### *3 Stages of Development*

- Digital Dabblers
- Digitizing Today
- Digitizing Tomorrow

#### *We are now in the second wave of Digital*

- First wave: driven by marketing & engagement (applies to parts)
- Second wave: enterprise wide & physical/digital combination (applies to whole)

Organizations go through 3 key states:

#### 1. Experimentations at the edge

Experimenting with Digital Giants through channels, platforms and joint ventures

Collaboration with traditional competitors

Starting the process: think big, start small, and scale fast

#### 2. Collision at the core

Friction of the digital innovation & traditional practices

#### 3. Re-invention at the root

Reframe the type of talent needed for a digital future

Adapt the workforce and culture for a digital age

Leadership roles & styles



## Interactive Breakout Session

### Digital Organizing Panel Discussion – Page 2

Geoff Waite, Rob Mettler, and Jamison Roof, PA

#### Process and Work: Design Thinking

- Empathize > Define > Ideate > Prototype > Test > Iterate
- Understand environments and workflow
- Create personas & journey maps
- Define behavior change mechanisms

Example: GE Pipe monitoring system was previously clunky and not easy for engineers to use. Solution: Integrate into a tablet format with specific GE formatting for visualization data. Not functionally improved but user interface improved.

#### Case 1

- Realize digital ambitions through organizational agility
- Company believed they were doing all the right things.
  - Senior Leadership had established a sound customer-centric strategy
  - The business knew what it needed
  - IT had successfully implemented new enabling technologies
- IT & Management struggled to work together
  - IT: Every request seems to be top priority
  - Business: IT estimates were always wrong, never know when something will be done
  - Leadership: Both seem to be pursuing slow, low value changes



## Interactive Breakout Session

**Digital Organizing Panel Discussion – Page 3**  
**Geoff Waite, Rob Mettler, and Jamison Roof, PA**

### Case 1 (Challenges)

Challenge 1: Why are we even doing this?

Define & track clear performance incentives for customer, employee, operations and financials

Challenge 2: Do we even work for the same company?

Formally establish a team that is not siloed, cross functional and close partnership

Challenge 3: Where are we going?

Quarterly planning and biweekly prioritization

Challenge 4: What's being "disrupted" is our decision making

Define digital aware governance and highest priority items to be implemented.

Shared ownership, fewer handoffs, less wait time, transparent status updates, scale determined by funding

Challenge 5: Our customer's voice is lost

Process is efficient, but losing sight of customer needs

Implement multiple customer touchpoints as seen throughout the customer journey. Journeys change and evolve over time.



# Digital Enablers

1. Bob Graf, Lubrizol Corporation - *Slides available*
2. Subbian Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Ken Loparo, Case Western Reserve University – *Slides available, video coming soon*
3. Joshua Ness, Verizon 5G Labs, – *Slides available*

## Interactive Breakout Session

### Digital Enablers – Page 1

#### Bob Graf, Lubrizol Corporation

- Bob Graf, Vice President of Data Science and Analytics at Lubrizol, presented the multiple facets of digital-first IT and data readiness in the modern business environment. After differentiating between sparse data and big data, Mr. Graf discussed the transition from on-premise to cloud-based solutions, and how doing so can enhance customer experience, streamline operations, and drive transformation.
- In the next section, Mr. Graf detailed the process of upgrading from descriptive analytics to predictive and prescriptive analytics while touching on the techniques to drive this innovation, including machine learning, deep learning, and artificial intelligence. For a company to gain this insight, they must have curious experts, good data, data science expertise, and management support.
- Mr. Graf concluded his presentation covering the topics of proprietary vs. open source software, waterfall vs. agile development, and the rise of non-linear, platform-based value creation in the modern market. While emphasizing both the technical aspects of data-driven innovation and the business components necessary to allow and leverage this innovation, Bob Graf delivered a fascinating look into the future relationship between digital innovation and business success.



## Discussion Panel

### Digital Enablers Panel – Page 1

Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University

#### Rockwell Automation

*How do customers benefit from a digital transformation strategy? Through scalable analytics.*

- Data moves bidirectionally between the device, system, and enterprise level
- Data and analytics can be descriptive, diagnostic, predictive, and prescriptive
- There is now enough computing time available to analyze data from each level in order to support decision making. Computer processing times have decreased from 25ms to .25ms
- It is not realistic to push data to the cloud and then process the data. Data must be processed locally in order to provide real-time prescriptive analysis
- People, process, and technology must be combined to effectively solve problems.
- Rockwell offers 387,000 SKUs; 200 SKUs are built to order; products have an average 20-year life.
  - Rockwell products collect data extremely quickly, so there is a massive amount of data collected. It is not realistic to transfer all of that data to the IT level
  - Rockwell offers Factory Talk, a suite of products that includes 4 suites - Design Suite, Operation Suite, Maintenance Suite and Innovation Suite (powered by PTC)



## Discussion Panel

### Digital Enablers Panel – Page 2

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

#### Eaton

- Cybersecurity and IoT are digital “derailers”
- Eaton is a B2B company that ensures that electrical power is delivered safely and effectively
- IoT connects the physical world to the IT layer through sensors and connectivity.
- The Industrial IoT (IIoT) focuses on improving connectivity, efficiency, scalability, time savings, and cost savings for businesses. The end goal is business productivity
- More than 6B people will live in urban areas by 2050. There is more electrification (electric vehicles), and there are more connected devices
- Electrical grid - integration between physical and IT
- \$6 Trillion will be spent on IIoT by 2050. How do we know that the safety standards are in place to provide effective cyber security?
- IT breaches result in a loss of personal information. If power grids are attacked, it can affect many more people. Governments are starting to examine manufacturing standards to ensure that IIoT products are safe and secure.



## Discussion Panel

### Digital Enablers Panel – Page 3

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

#### Eaton

- IIoT solutions are expected to last for the life of the building, whereas consumer electronics are upgraded on a much smaller time scale. Consumers can reboot devices, but it's much more difficult to reboot the power grid. This means that it is much more difficult for power companies to protect their industrial assets.
- How can power and utility companies protect themselves?
  - Hardware that includes security
  - Segregating secure from insecure sources
  - Wireless, secure updates
  - Upskill the workforce by working with universities to recruit talent
  - Provide awareness training to employees
  - There are a number of different, overlapping standards for cyber security. Standards bodies will need to come together to develop easily consumable standards.
  - Cyber attacks are sophisticated and autonomous, and difficult to protect against. Product and system level standards, such as UL, will need to be developed. There is also a need to verify that these devices are implemented safely and securely in the field.



## Discussion Panel

### Digital Enablers Panel – Page 4

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

#### MAGNET

- Enabling small manufacturers through Industry 4.0
- Magnet helps manufacturers in Northeast Ohio (NEO), and provides them with high end resources. They are supported through Ohio's Manufacturing Extension Program. They help manufacturers connect students with jobs through an apprenticeship model; Growth through consulting; startups
- 45% of NEO economy is driven by manufacturing; a singular manufacturing job drives 3.6 other jobs.
- Industry 4.0, or the smart factory, is directly related to manufacturing. This is worth \$14B in economic gains to NEO. Robotics are being used in NEO manufacturing facilities. Larger companies are adapting more than smaller companies. Overall, small & medium companies (SMEs) have been slow to adopt emerging technologies, including 3-D printing and smart connected machines.



## Discussion Panel

### Digital Enablers Panel – Page 5

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

### MAGNET

- Why are SMEs slow to adopt? They may not have the knowledge of these capabilities or the support network to move down this path.
- How is MAGNET Helping with...
  - Enabling industry 4.0 innovation - largest 3D printer, enabled with analytics to improve production; help companies engage with collaborative robots that augment human activity; engineers are building machines for clients; working with startups to evolve legacy infrastructures; developing technology to fill open jobs (example: a welding machine that can weld any seam, even those that it has never seen before).
  - Experience and stories - Have a manufacturing facility near Cleveland State University that serves as a laboratory for NEO manufacturers. Companies can come in and “play” with the technology.

## Discussion Panel

### Digital Enablers Panel – Page 6

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

#### MCPc

- Modeling the future - tech talent and capital
- Community innovation partners - dedicated to the future vision of technology and talent
- MCPc is a data protection company focused on “security certainty”.
- You don’t know what you don’t know; You can’t measure what you can’t see; You can’t protect what is already gone
- MCPc provides an offering that includes advisory resources as well as technology solutions intended to provide a chain-of-custody security solution.
- There is a difference between carpeted (IT) and non-carpeted (industry) environments. MCPc started in the carpeted environment and is moving to the non-carpeted - manufacturing, healthcare, etc.
- MCPc has developed a benchmarking tool that can help companies understand where they fall in comparison to their peers
- *“By 2023, the average CIO will be responsible for more than three times the endpoints that they manage in 2018” - Gartner*



## Discussion Panel

### Digital Enablers Panel – Page 7

**Subbian (Raj) Govindaraj, Rockwell Automation; Michael Regelski, Eaton; Brandon Cornuke, MAGNET; Michael Trebilcock, MCPc; Moderator: Ken Loparo, Case Western Reserve University**

#### MCPc

- How do organizations keep track of which employees have what type of information on which devices?
- 70+% of companies have no articulated data protection requirements for their subcontractors
- Digital technology is a set of tools that are highly configurable
- Disruption doesn't have to be high-tech. MCPc used to be a computer reseller and has evolved into a cyber security specialist. Human capital delivers the “product” and provides customer satisfaction and is spending time recruiting and developing human capital.

## Breakout Session

### Digital Enablers: 5G and the Impending Technology Revolution – Page 1 Joshua Ness; Verizon 5G Labs

#### Evolution of wireless networks

1G: Calls

2G: Calls and texts

3G: Data and applications

4G: LTE: High speed data, IoT, expanding capabilities

5G: Ultra low latency, ultra-reliable transmission, high bandwidth, massive IoT scale

Compared to 4G, 5G has:

- Energy Efficiency
  - Devices will consume less energy
  - Intelligent beamforming/steering
- Latency & Reliability
  - E2E latency 5ms
  - Reliability 99.9999%
- Speed & Throughput
  - Peak data rate of 10 Gb/s
  - Mobile data volume 10Tb/s/km<sup>2</sup>
- Mobility & Connected Devices
  - Connected devices 1M/km<sup>2</sup>
  - Mobility 500 km/h



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#### How can we use 5G to transform hardware?

Multi-access Edge Compute

An intentionally different approach to ecosystem

Things to consider

- Can you be the first mover in your industry? Are your CUSTOMERS first movers in theirs?
- What sectors could you enter with 5G and enabled technologies?
- What sectors could your CUSTOMERS enter with 5G enabled technologies?
- What bets will you make on how your COMPETITORS will evolve using 5G and enabled technologies?
- What bets will you make on how your customers and their customers will evolve using 5G and enabled technologies?

#### Ultimately, 5G drives the Fourth Industrial Revolution

Cyber Physical Era

- Massive change on the back of 5G technology shifts combining for a flywheel effect.
- AI, Next Gen Cloud, IoT, AR/VR/MR and 5G.
- Pervasive intelligence, massive sensorization and immersive augmented capabilities.



# Digital Talent

1. Cheryl Hay, JobsOhio; Sue Helper, Case Western Reserve University; Gene Sasso, Siegal Lifelong Learning Center, Case Western Reserve University – *No highlights captured, slides available, video coming soon*
2. Robert Arbogast, Timken Company – *No highlights captured, slides available*
3. Pawan Divakarla, Progressive Insurance; Bill Nottingham, Nottingham Spirk; Kalle Lyytinen, Case Western Reserve University – *Slides not available, video coming soon*

## Digital Talent Panel Discussion – Page 1

Pawan Divakarla, Progressive Insurance; Bill Nottingham, Nottingham Spirk;

Moderated by Kalle Lyytinen, Weatherhead School of Management, Case Western Reserve University

*It is harder for incumbents to become digital than digital natives. There are cognitive barriers. How to train designers and analytics people? Should individuals have both skills?*

**Divakarla:** Digital Transformation is based on the “Horizon Strategy:” Execute –core business; Expand—new opportunities; Explore---futures. DX is disruptive and it is important to recognize and embrace this reality. DX requires people, processes, and tools and bringing the user into the equation.

**Nottingham:** We create micro teams that have ownership, almost like a startup. We use the Marvel Method: storytellers speaking to designers. Balanced Teams that use design thinking, and analytical, UX, design, engineering, prototyping, manufacturing all need to be involved in the process. Digital revolution requires openness to outside perspectives and ideas.

*How do you manage thought diversity?*

**Divakarla:** We look at different skills when hiring. Looking for teamwork and differences in thinking rather than just hard skills. Progressive recognizes that the way we’ve always done it doesn’t work anymore.

**Nottingham:** Nottingham Spirk uses the words “we” and “I” as a screener. This is an indicator of collaboration.

**Divakarla:** Progressive tries not to say no to any ideas—they say not now or not in this context, instead. These ideas become part of the backlog. Timing of an idea is critical. There may be a good idea but if it is too early, it may not be successful. The leadership team also talks about failures



## Digital Talent Panel Discussion – Page 2

Pawan Divakarla, Progressive Insurance; Bill Nottingham, Nottingham Spirk;

Moderated by Kalle Lytinen, Weatherhead School of Management, Case Western Reserve University

*Is it better to do things in-house or outsource?*

**Divakarla:** Historically, Progressive has focused in-house. For areas that are not core competencies, we will bring in outsiders. They are learning that there is talent and knowledge outside the organization that they need to tap into.

**Nottingham:** NS believes outsourcing is the best way to test something. It may turn into a new area of the business.

The boundaries of innovation are changing. Consider crowdsourcing as a means of solving well-defined questions or problems. It is easy to get comfortable. It's beneficial to look at what others are doing, just as an observer rather than looking at how to solve a particular problem.

*How do you fail and fail fast in digital transformation?*

**Divakarla:** They try to set aside funds and partition certain ideas that are measured differently than the rest of the organization. We have a usability lab and customers are brought in for observation.

**Nottingham:** We utilize an augmented reality program: Magic Leap, that allows for viewing prototypes of products so we don't need to build something before we can test it. MVP needs to be tested, but there must be iterations after that. The next generation products must always be in the works.

*How much authority do teams have? How is capital allocated? How does the organization ensure that the team is moving in the right direction?*

**Divakarla:** Requests for funding are accompanied by a cost benefit analysis. Project sponsors usually have the authority. There is also a dashboard that tracks the health of a project (red, yellow, green).

