

Applying the Right Tools for Your Digital Transformation

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Digital Transformation of Industry
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lux executive summit

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Agenda

- › Digital Transformation: A cautionary tale
- › The emerging Digital toolset
- › Using Digital to improve – or save – your business



Digital Transformation is a matter of survival



1996



"Kodak has identified several untapped markets for CD-R, including Internet archiving, in which they will be used to download, store and archive massive content from the World Wide Web, said Larry Zimmer, worldwide general manager, CD/DVD products"

Released poorly received DC-20, while rolling out a new film line



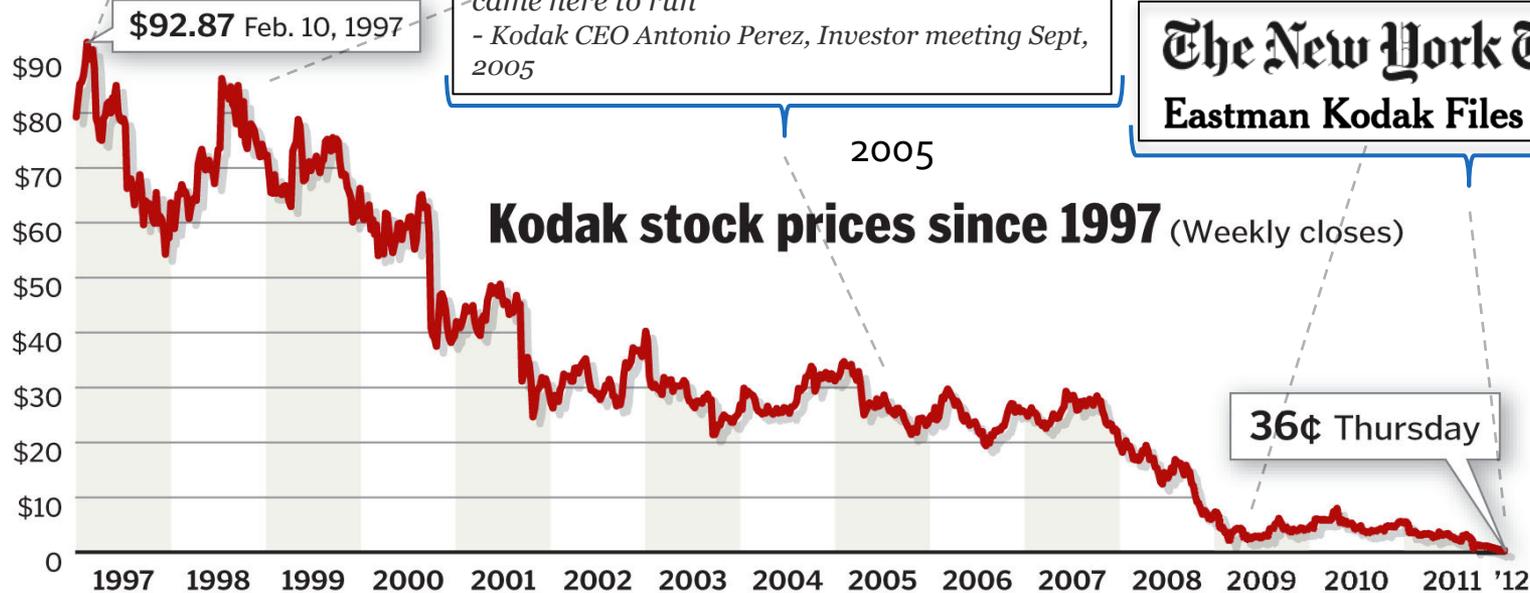
2009

Kodak's Slow Fade: Inventor of OLED Sells OLED Business | GIZMODO

1998

'By 2008, Kodak will be the digital company I came here to run'
- Kodak CEO Antonio Perez, Investor meeting Sept, 2005

The New York Times
Eastman Kodak Files for Bankruptcy

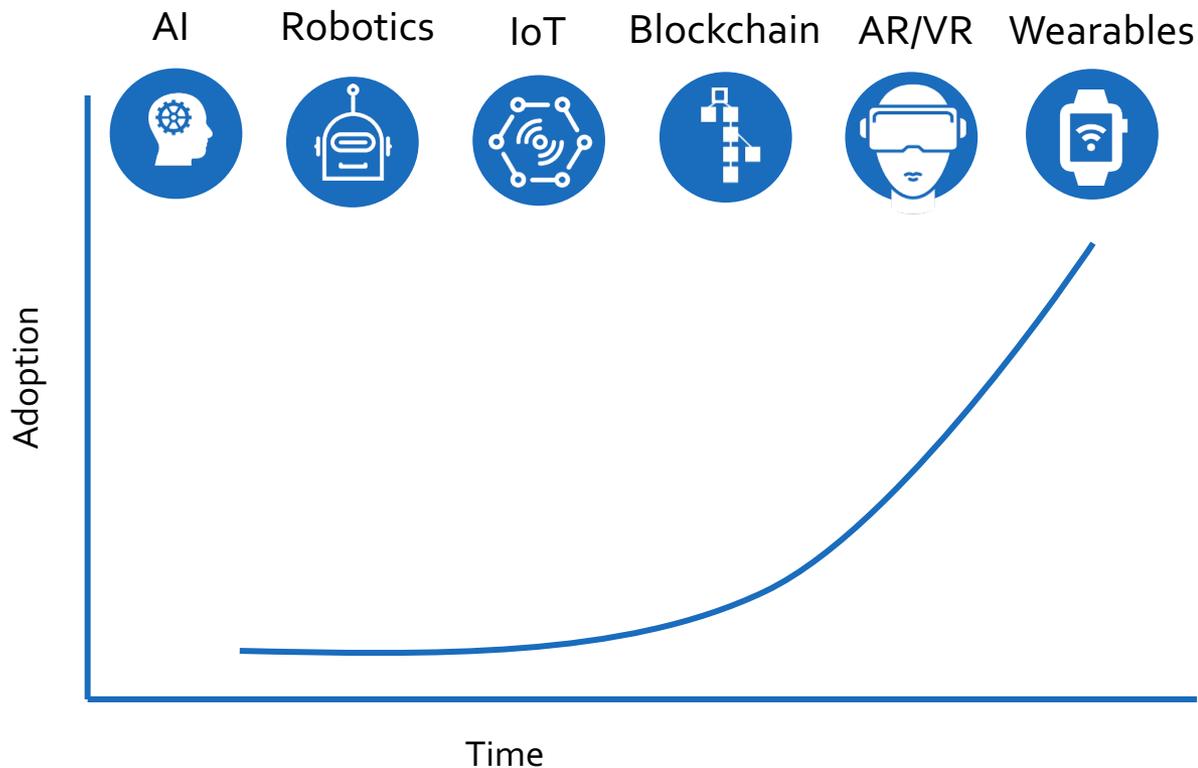


2012

THE PLAIN DEALER

Reference: nightowltrader.blogspot.com, Cleveland Plain Dealer, <http://www.plasticsnews.com/>, www.nytimes.com, www.gizmodo.com

Knowing the trend is not enough



- Following the trend does NOT guarantee success
- The companies that win in Digital Transformation need to understand the trend – and implement these tools effectively



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Do you know what's in your digital toolbox?

AI



Robotics



IoT



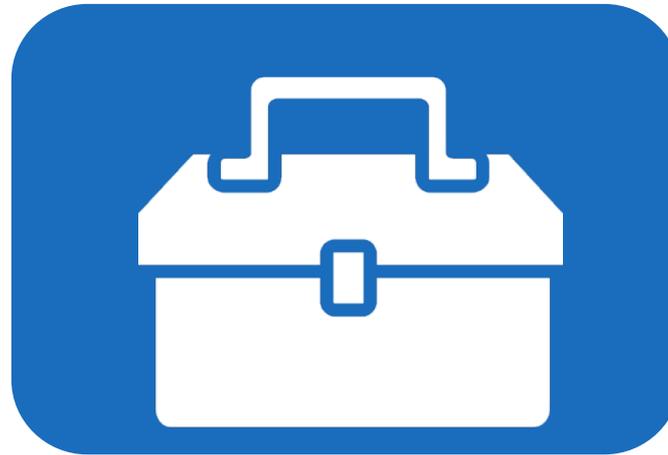
Blockchain



AR/VR



Wearables





What is NLP good for? Case studies in how businesses are already using language understanding

- Natural Language Processing (NLP) can be a tremendously useful part of any company's AI toolkit, helping to:
 - Understand internal and external documents, such as what companies, people, or locations are mentioned and in what context (like actions), and even helping with translation
 - Generating dialogue, including for virtual "chatbots" that interact with us
 - Gauging customer sentiment and emotion, such as feedback via social media channels



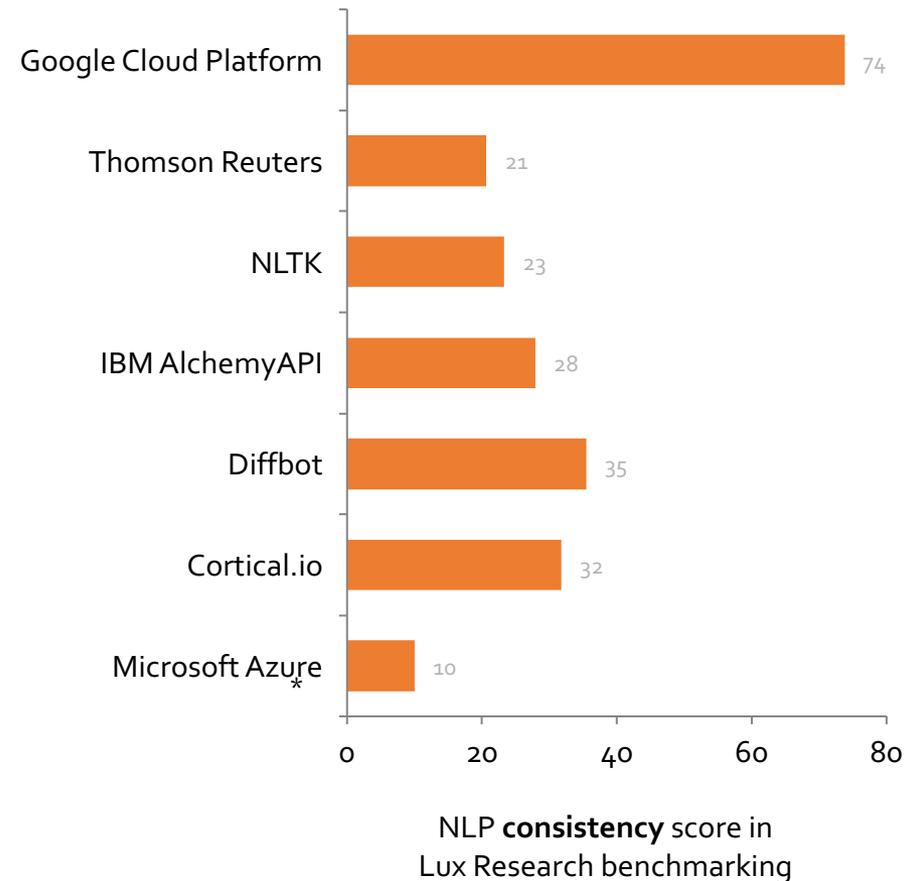
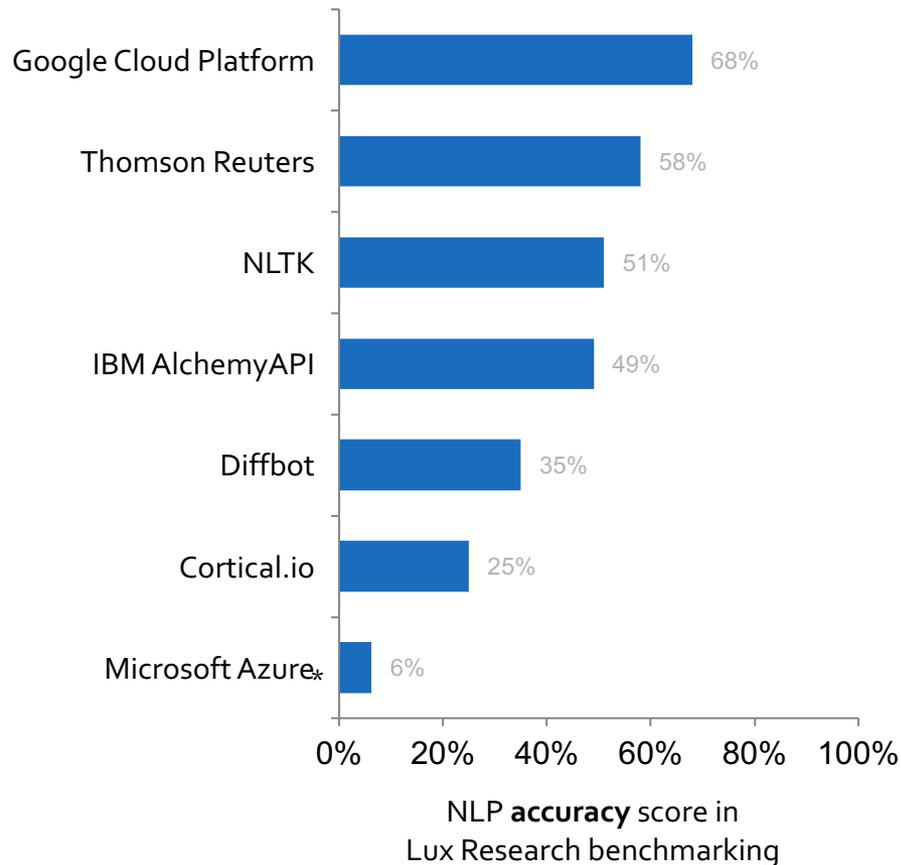
Building an NLP experiment

- We selected 10 technical articles from 10 sources across a range of Lux coverage areas, including energy and materials
- Fed it into available NLP engines and grouped the NLP results into:
 - Entities
 - Actions identified
 - Taxonomy findings
- Compared this to what the analysts pulled out of the very same articles
- Measured the efficacy of the NLP engine for accuracy vs analyst findings, as well as consistency (variance) from article to article





Only one NLP solution manages to be both relatively high-accuracy *and* consistent: Google



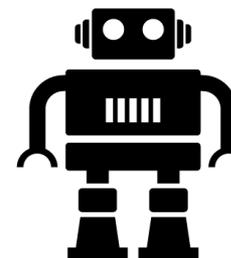
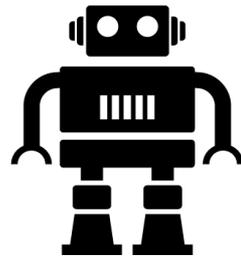
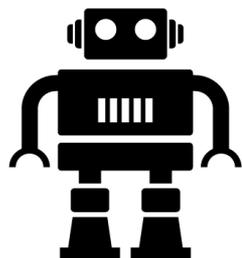
Robots: friend or foe?



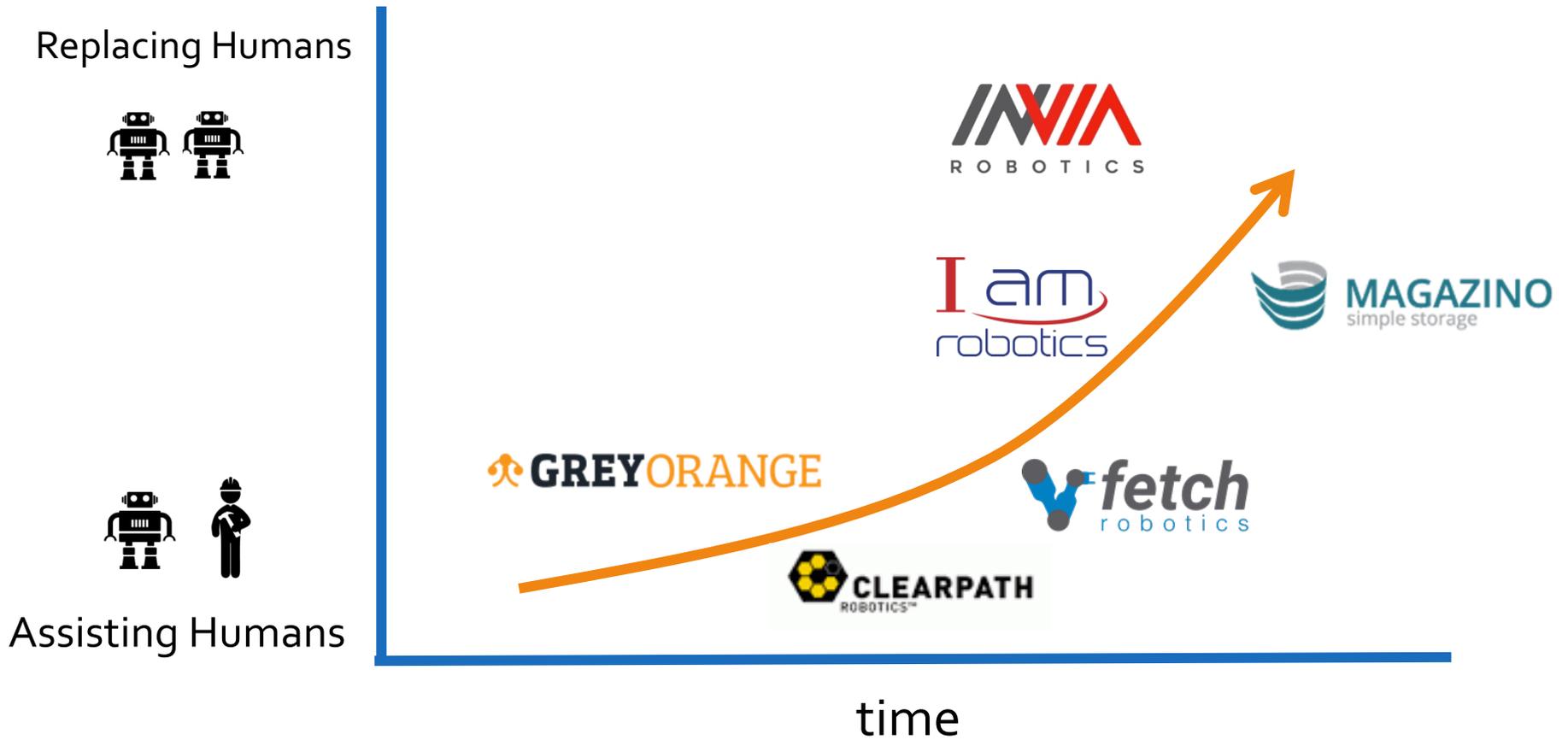
Replacing Human Workers

vs.

Assisting Human Workers



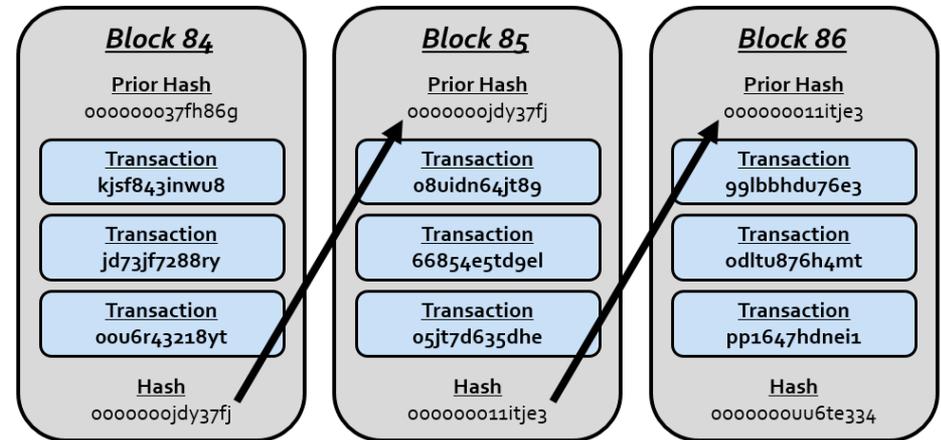
Emerging companies fall along a spectrum



Building blocks of blockchain



- First successful deployment in Bitcoin
- Encrypted database on each device, which allows for large numbers of nodes to converge on a single consensus of the most up-to-date version of the data sets being recorded by the network



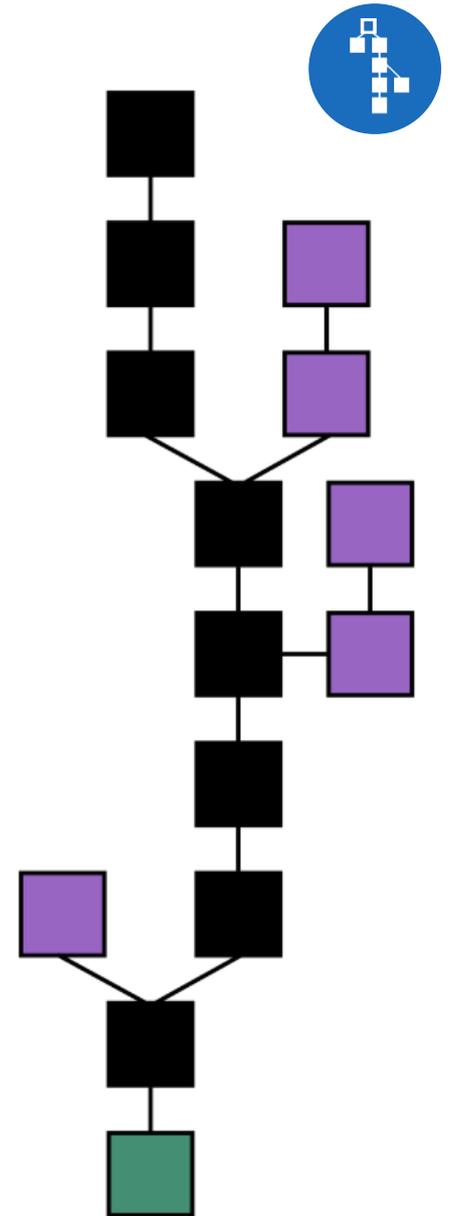
- Each “block” includes all the recent transactions, along with “proof of work”
- Creates a prohibitively high cost to attempt to rewrite or alter transaction history
- Numerous developers building blockchain solutions in other industries



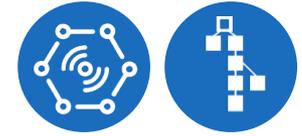
What's so special about blockchain?

Developers are drawn to blockchain technology due to its:

- Decentralization – no central authority/owner
- Simultaneous public openness and pseudo-anonymity
- Security and data integrity
- Ability to embed value in the form of token currencies
- Smart contract functionality



Brighann Cotton & Skuchain take supply chain out of the stone ages

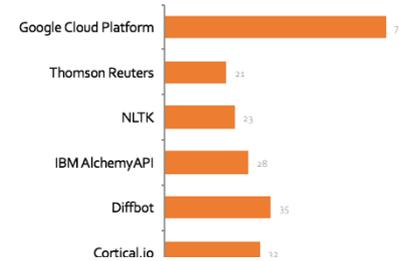
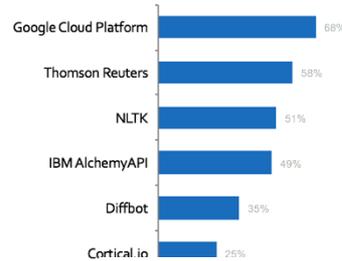


- › Brighann Cotton streamlined a shipment of cotton from Texas to Qingdao, China, using blockchain, smart contracts, and IoT.
- › **Blockchain:** Wells Fargo and Commonwealth Bank of Australia were able to digitally develop a letter of credit on behalf of the buyer and seller using Skuchain's distributed ledger
- › **IoT:** Payment triggered via smart contract integration with an IoT solution for tracking containers.



Answering key questions around the tools

➤ What's the best tool?



➤ How are the tools evolving?

Microsc Replacing Humans



Assisting Humans

GREY

INRIA ROBOTICS

TAM. MAGAZINE

BRIGHANN COTTON

skuchain

CommonwealthBank

WELLS FARGO

➤ How do I use the tools?



Agenda

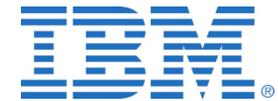
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Winning teams have the right players

› Digital demands dedicated effort

- › Head of Digital Transformation Strategy
- › Director, Digital Innovation Organization
- › Director, Open Innovation, New Business & Digital Disruption
- › VP Digital Transformation
- › Team Lead Digital Workplace Business Services
- › General Manager, Digital Enterprise Realization
- › General Manager of IT Innovation
- › Digital Factory Business Development
- › Global Head- Digital Innovation Program
- › Senior Vice President, Project Leader 4.0



- › **New titles/functions**
- › **Dynamic, align with needs**
- › **Can build cross functional teams**
- › **Must be empowered to make change**



Segment the enterprise



> What do I sell?

- > Equipment
- > Chemicals and materials
- > SaaS
- > Energy
- > ...

> Can digital tools...

- > Make my product smarter/better?
- > Create new products/services?
- > (in the hands of others) threaten my market?

> What keeps my business running?

- > IT
- > HR
- > Mfg and Supply Chain
- > Marketing

> Can digital tools...

- > Make my people smarter, faster, safer?
- > Lower costs?
- > Enhance efficiency?



Process: Digital done wrong can have devastating effects

Target Hackers Had Access To All Of Chain's US Cash Registers In 2013 Data Breach: Report



- Target installed advance HVAC systems to lower costs on the same network as POS solutions (!!!)
- Hack occurred through third party HVAC vendor
- Net result: 40 million people had credit/debit card data exposed
- Federal Judge mandates:
 - \$10 million set aside for hack victims
 - Designation of a Chief Information Security Officer



Product: The IoT is bringing amateurs into the digital world

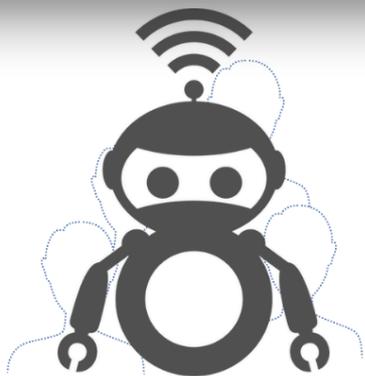
DANGEROUS SECURITY FLAW
DISCOVERED IN SMART COMMERCIAL
DISHWASHER

The Miele logo, consisting of the word "Miele" in a white, bold, sans-serif font, centered within a solid red square.

- Miele released a commercial dishwasher with networking capability
- Researcher discovered a flaw that would allow easy access to the local network
- Researcher informed Miele but received no response, leading him to take the bug public
- **The IoT is in a dangerous phase where companies lacking connectivity expertise and systems to report bugs are creating new attack surfaces**

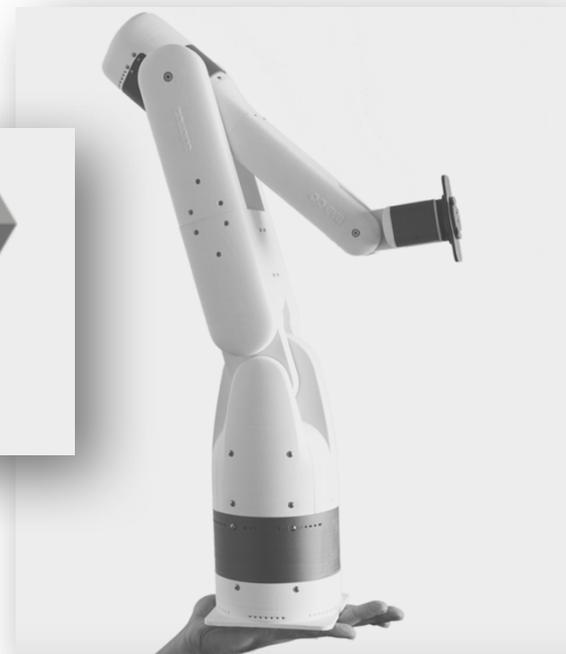


Product: It isn't just about technology – it's about business model too



Hire a Robot

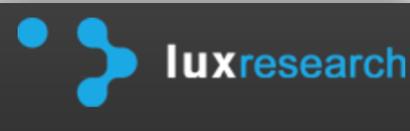
Hire a robot just like you would a human with zero upfront costs. Run the robot 14 hours, pay for 14 hours. Run the robot 18 hours, pay for 18 hours. No need to schedule an employee or pay for unproductive time.



COMPANY PROFILE

Automata Technologies

Low-cost plastic robot arm



"Automata Technologies offers its product as a robot-as-a-service model with a monthly fee ranging from \$500 to \$750; the service comes with an EVA unit, the choreoGraph software, and includes maintenance and replacement of the robot; customers can expect 4,000 hours of continuous use before needing to replace it"



Process: Seeing through the hype – IoT Platforms

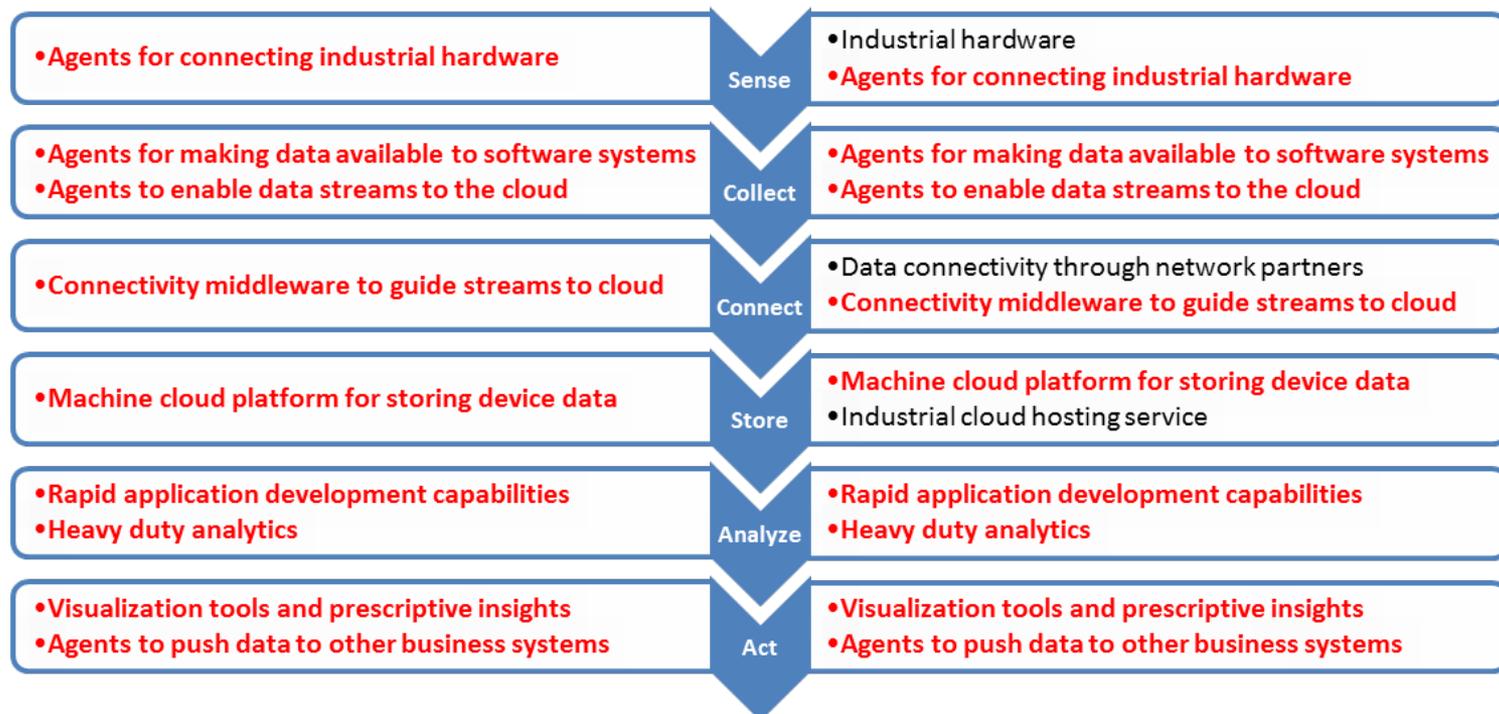


GE and PTC Form Broad Strategic Alliance to Pursue Brilliant Factory Opportunity



PTC Solution Stack

Predix Solution Stack



***bold red text** denotes a direct overlap in platform capabilities

Source: Lux Research, *A Tale of Two IoT Titans: The Curious Case of the GE – PTC Partnership*



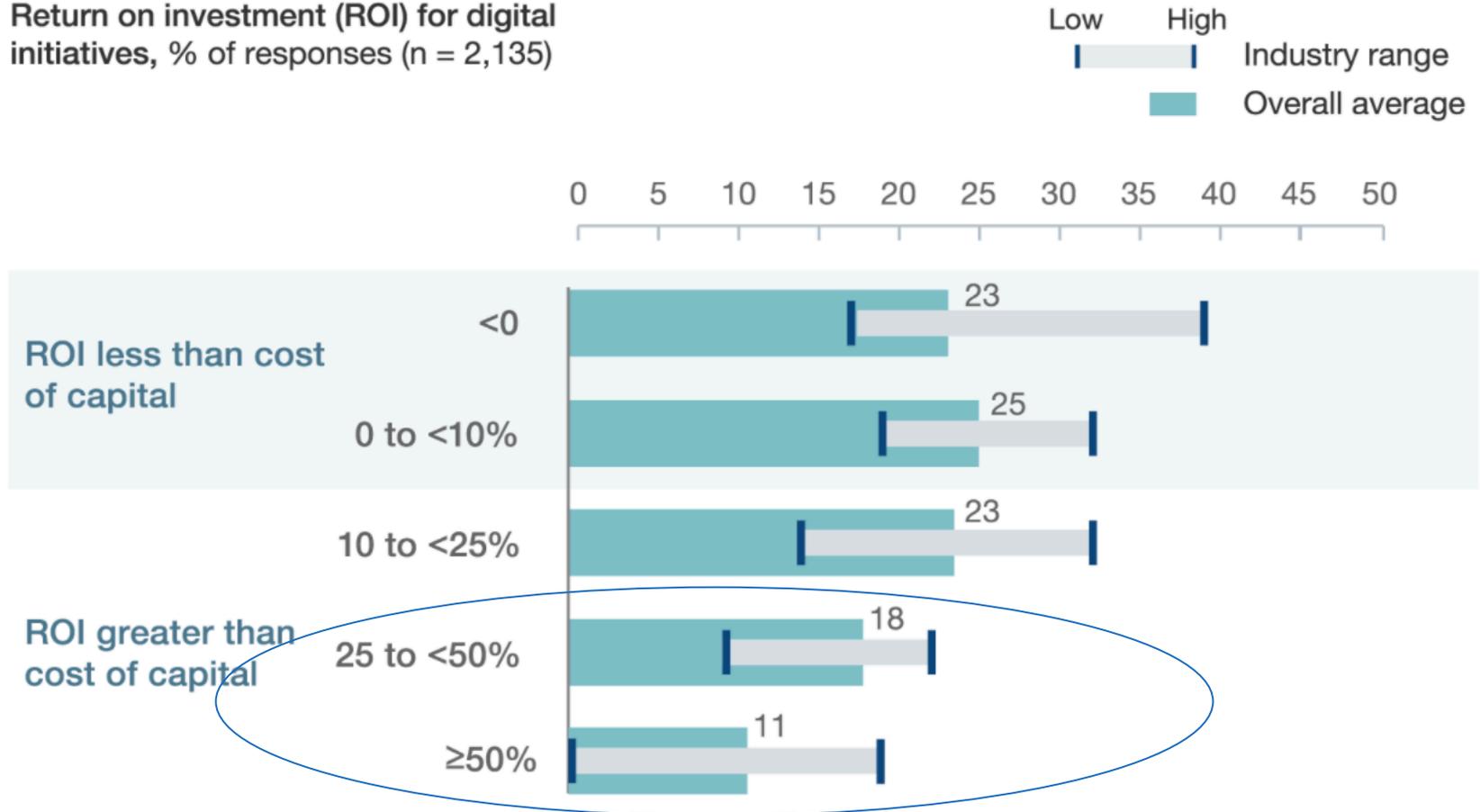
Put the pieces together

- Launch initiatives to consider new product features, new product, and new process
- Assess tools/trends/state of the art via a cross collaborative team
- Buy or build?
 - Is the problem solvable with technologies in the market or developed in emerging companies? (probably!)
- Partnering: start small before going big
 - Pilots and joint development – startups, corporates
 - Scale deployments – highly vetted/acquired start ups, corporates



Everyone can't win

Return on investment (ROI) for digital initiatives, % of responses (n = 2,135)





Thank You



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