



# Bytes, Bots, Brains and Business — The Digital Disruptors

Stephen Prentice

**“Whether you think you can,  
or think you cannot,  
You are right!”**





**This Is a Story About DATA ....**

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# Digital Business Continues to Evolve

2000

2005

2013

2020

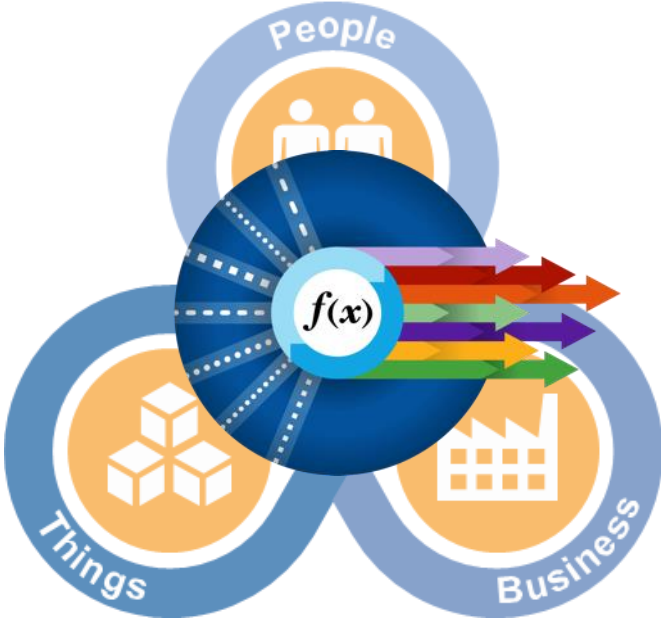
**Web**

**E-Business**

**Digital Marketing**

**Digital Business**

**Algorithmic Business**



# Bytes: The Inexorable Growth of Data

In 2015 we created 2,500 exabytes of data every **DAY**.

Over 500,000 new devices connect to the internet every **HOUR**.

Global internet traffic is running at over 220 terabytes every **MINUTE**.

We send more than 2.5 million emails every **SECOND**.

That's 100 million Blu-ray disks!

90% of all data in the world has been created in the last TWO years, 90% of all data is **UNSTRUCTURED**.



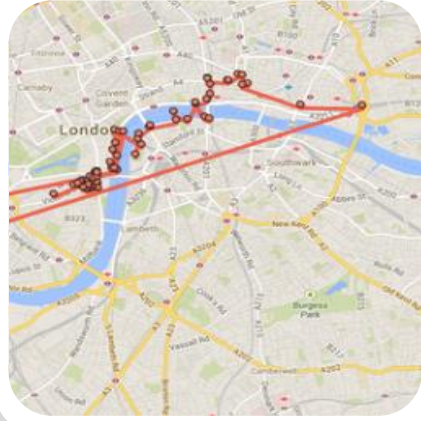
More/Better data can enable better decisions in the future. Ensure you build the data/analytics capabilities essential to grow your digital business.

# New Types and Sources of Data Are Becoming Available ...

Health, Fitness



Location Data



Connected Devices



Social Media



Space



As people and things come online, the physical and digital worlds blur and digital business emerges.



Accurate data which reflects the physical world enables digital business. Search for incremental revenue streams from new products and services.



# ... Creating New Business Opportunities, and an Issue!

Efficient Jet Engines (GE)



Data Monitoring (Ushahidi)



Precision Agriculture (John Deere)



Ordering a Taxi (Uber)

UBER

Mapping GDP from Space (Spaceknow)



Information about the availability of an asset can transform the need to own the asset



Combining real time data from multiple sources (including open data) creates new opportunities, but CEOs must address two critical issues ...



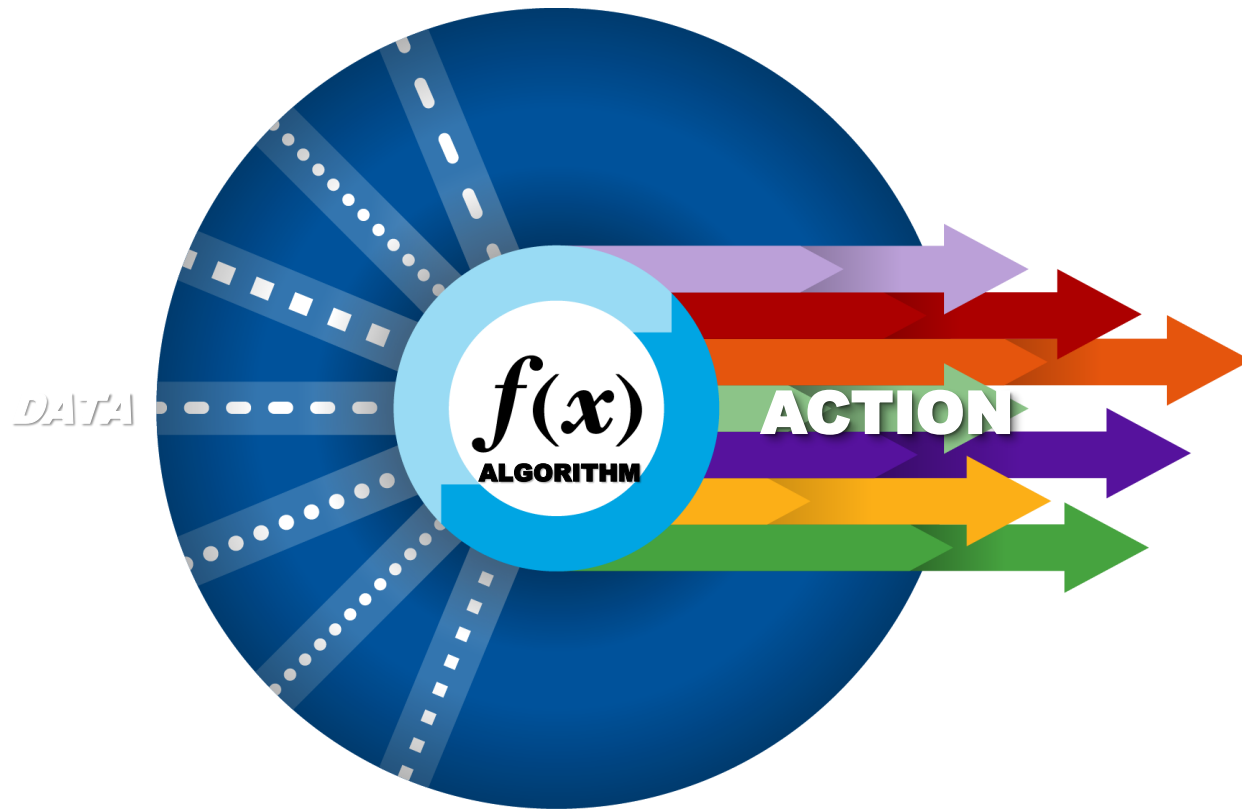
# Who owns the data? What can we do with the data?



"It's complicated" is NOT a sufficient answer. Ownership is not enough. CEOs must elevate digital ethics into a critical discipline



# Data + Analytics = Algorithmic Business



Algorithmic business is the **industrialized** use of **complex** mathematical algorithms **pivotal** to driving improved business decisions or process automation for **competitive differentiation**



Algorithms capture the knowledge that turns raw data into valuable insight. Use them to drive speed, scale and consistency in your digital business.

# Algorithms Drive Revenues and Differentiation



Amazon Recommendations  
**Increases Online Revenue**



Map and Crowdsourced Routing  
**Deliver More Accurate Results**



Detailed Crop Insurance  
**Outcompete Other Insurers**



Algorithms applied to huge datasets allows highly accurate, personalized offerings. Take advantage of this to drive revenue and differentiation.

# Then Google's DeepMind Won at Go



Artificial Intelligence (AI) has advanced dramatically in recent years, AI with DNN learning is starting to outperform humans in some areas.

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# AI — Giving Smart Things a "Brain"

- AI can extract insight from unstructured data (when it has access to huge datasets) but there is a huge difference between knowing and understanding
- Hence AI needs human guidance to apply critical thinking and judgment to what it discovers — "synthetic intelligence"
- "Narrow" AI is becoming better than humans at defined tasks
- "General" AI is still a long way off (except in the movies!)
- As the use of AI grows, expect regulation and licensing
- **AI enables technology to grow from simple tool to smart servant and then to active participant in society**



CEOs should be objective about what AI can do and not believe the depictions in the movies. AI is a technology CEOs cannot afford to ignore.

# AI and Bots Help Platforms Gain a Voice

"Alexa, turn on the living room lamp"



wink + amazon echo



"Amelia, how do I ...?"



The ability to converse with AI enabled platforms transforms the customer experience. CEOs must ensure their CIO/CTO is actively engaged.



# Algorithms, AI, Bots, Chatbots — Learn Your ABC!



is for **algorithms** which deliver the ability to capture and productize knowledge, and also for **artificial intelligence (AI)** which enables systems to better handle unstructured data and identify relationships.



is for **bots**, small software modules/programs designed to automate repetitive tasks like finding and displaying information. They may utilize AI to manage more unstructured data and complex tasks.



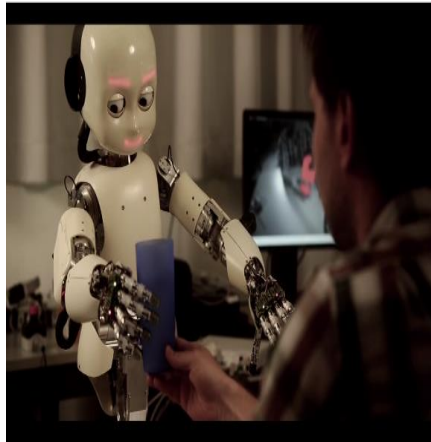
is for **chatbots** which use AI to process human language, and so redefine the user interface to bots, especially in areas like customer service and as virtual assistants.



Algorithms, AI, bots and chatbots are transforming the user experience. CEOs must prepare their organizations to embrace the new paradigm

# Bots Get Physical

## Social Robots



## Collaborative Robots



<https://vimeo.com/66203042>

## Drones



## Self-Driving Trucks



Algorithms and AI deliver the intelligence to empower a new generation of robots, cobots, drones and self-driving vehicles. Embrace the opportunities.

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# When Things Become Customers

- They create fluid algorithmic markets.
- My bot orchestrates interactions with your bot (and others), who negotiate further interactions ...
- What happens to CRM?
- What about liability and regulation?
- Today's payment systems will struggle to cope with trillions of bot-to-bot transactions.
- Things will collaborate and form "swarms."



AI will enable devices to become adept at handling routine transactions. CEOs must exploit the potential as "things" become "customers."





- Transformation? I don't think so!
- Everything becomes a Utility
- Some Industries WILL be destroyed!
- ALL Industries will need to split and refocus
- Kurzweil and the Singularity are a (dangerous) distraction – but it makes for good movies!
- 5 Steps:
  - Driven from the top (really!)
  - Connected everything drives data/analytics
  - Technology enabled efficiency
  - New Business Models
  - Disruptive technology

# Recommendations: Be Rational, Be Careful, but Be Bold

- ✓ Explore new sources and types of data to discover new opportunities.
- ✓ Fueled by data, analytics and AI digital business and algorithmic business will continue to grow and disrupt industries.
- ✓ AI is NOT a silver bullet, and digital ethics will play an increasing part — but you cannot afford to wait on the sidelines of this wave.
- ✓ Define your algorithm, AI, ecosystem and digital platform strategies.
- ✓ As bots and chatbots develop, connected things will become customers — move now to adapt your business model and systems to accommodate this development.



Data and analytics are core to the digital business transformation journey. CEOs must balance risks and rewards to ensure success at every stage.