TAKE CONTROL in the digital revolution

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What would your business look like in 5 years if Google entered your industry today?

1. Disruption
Digital Transformation
The CEO’s new challenge

“Digital transformation is the transformation of businesses and organizational activities, processes, competencies and models to leverage the changes and opportunities of digital technologies and their impact on society in a strategic and prioritized way - with present and future shifts in mind - iScoop”

From Industry 1.0 to Industry 4.0

**FIRST**
Industrial Revolution
Through the introduction of mechanical production facilities with the help of water and steam power

First mechanical loom, 1784

**SECOND**
Industrial Revolution
Through the introduction of a division of labor and mass production with the help of electrical energy

First assembly line, Cincinnati slaughter houses, 1870

**THIRD**
Industrial Revolution
Through the use of electronic and IT systems that further automate production

First programmable logic controller (PLC), Modicon 084, 1969

**FOURTH**
Industrial Revolution
Through the use of cyber-physical systems

Source: LNS Research
THE IT HYPE CYCLE

Gartner Hype Cycle for Emerging Technologies, 2016

- Cognitive Expert Advisors
- Connected Home
- Blockchain
- Smart Robots
- Micro Data Centers
- Gesture Control Devices
- IoT Platform
- Commercial UAVs (Drones)
- Affective Computing
- Smart Data Discovery
- Virtual Personal Assistants
- Brain-Computer Interface
- Volumetric Displays
- Smart Workspace
- Personal Analytics
- Quantum Computing
- Data Broker PaaS (dbrPaaS)
- Neuromorphic Hardware
- Context Brokering
- 802.11ax
- General-Purpose Machine Intelligence
- 4D Printing
- Smart Dust
- Machine Learning
- Software-Defined Security
- Autonomous Vehicles
- Nanotube Electronics
- Software-Defined Anything (SDx)
- Natural-Language Question Answering
- Enterprise Taxonomy and Ontology Management
- Augmented Reality
- Virtual Reality

Plateau will be reached in:
- less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years

Source: Gartner
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2. Fundamentals

“In a world of constant change, the fundamentals are more important than ever”
- James Collins
ANALYSING PROCESS DATA IS NOT EASY
CHALLENGES WITH REAL DATA

- Diverse systems
- Different time scale
- Data ownership
EXPERT SYSTEMS ARE NOT EASY
WHAT COULD POSSIBLY GO WRONG?

Hi-tech plant
The system was implemented in a high tech plant. Operations staff were graduates or held diplomas and highly skilled

G2 Expert
The expert system was intended to help operators with smart alarms, derived process variables, cost flow models

Dilemma
The people were smart, in fact smarter than the expert system. The G2 system was never accepted because it told operators what they already knew, never more
ARTIFICIAL INTELLIGENCE IS NOT EASY

“We want to press a button and get a fully optimised production plan for all the plants, all the products, all distribution networks and all customers”

- Optimise the whole system
- System does all the calculations
- Execute detailed production plans

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3. Take Control

Don’t worry about things you cannot control
REMEMBER THE PID?
PROPORTIONAL

- Fast tactical response directly proportional to error
- “Agile”, “shadow IT”, skunkworks, “dual structures”
- Must demonstrate early success
- Keep projects small and under the radar
INTEGRAL

- A long term strategic approach to
- Correct a business that is drifting steadily away from the desired course
- Build future resilience with good foundations
  - Good Platforms
  - The right skills
  - The right culture

- Involve the C-Suite in strategic projects
Example: Develop a conceptual roadmap for your future platforms
• Respond to **rate of change** (accelerating, stabilizing?)

• Look for trends in adjacent industries
  • Consumer – specialty – commodity – heavy industrial

• Look out for disruptive new industries
  • Google, Uber, Air B&B, Amazon

• Watch the Gartner hype cycle

• Forget the CEO!
• Work with the strategy influencers
Without a business case digital transformation just won’t happen.
• Industrie 4.0 was developed to give countries who depend on manufacturing a competitive future position

• Led by Germany – where Manufacturing is 24% of GDP and the foundation of the economy

Manufacturing Contribution to GDP in SA 1960-2016
EACH INDUSTRY IS UNIQUE

**AEROSPACE & DEFENSE**
- 51% Collaboration with increasingly complex supply chains
- 49% Integration of business, engineering, and operations

**LIFE SCIENCES**
- 67% Regulatory requirements for quality management
- 49% Labeling, serialization, and traceability requirements

**OIL & GAS**
- 66% Impacted by the market volatility

**FOOD & BEVERAGE**
- 67% Compliance with food safety and modernization act

**CHEMICALS**
- 57% Regulatory environment

Source: LNS Research/MESA 2016
THE BUSINESS CASE

Every digital project will need one

Without a good business case no digital transformation project will see the light of day. Most projects do in fact have a good business case, many fail however because the project sponsor fails to convince the business of the value add; politics get in the way or there is a risk averse culture that does not accept failure.
THE CMO MIGHT BE YOUR BEST FRIEND

Understanding the customer drivers

Service Levels
Loyalty
Now, not later
Trust
An open letter to CEO’s – Strategyzer July 2017
WORK WITH PARTNERS
Unlock value through collaboration

Understand who your partners are:

Do they share the same vision?

Can you unlock value by pooling resources and data?

Requires a collaboration mindset
VENDORS WILL COMPETE FOR THE PLATFORM

In future you probably won’t even own “your” data
5. Finally – what about YOU
85% of your financial success is due to your personality and ability to communicate, negotiate and lead.

Shockingly, only 15% is due to technical knowledge.

~Carnegie Institute of Technology
THE NEXT “HOT” SKILLS

Data Analytics
Data processing, forecasting and correlation, deep learning, advanced analytics

Continuous Learning
A degree for life no longer adequate – continuously try new things

Business Model Canvas
Innovation, Business Model Canvas, Product Management, Business Analysis, Monetisation

Soft Skills
Collaboration, Emotional Intelligence, Problem Solving, People Management, Creativity.
Take Control

Disruption
Fundamentals
Control
Business
Personal