The IR4, Preparing For a Very Different Tomorrow

Samer Abdullatif
IBM
The Industry Revolution 4, The new Era
Welcome to the Industrial Revolution 4.0

1.0
Mechanical
Mechanical production equipment
1784

2.0
Electrical
Mass production
1870

3.0
Internet
Automated production
1969

4.0
Digital
Automated complex tasks
Today

10x impact of the Internet Revolution

Blurring the physical and cyber digital divide
Impact
Socio-Economic
Industry
Government
Individual

Scalable efficiency
Doing things right

Scalable adaptability
Doing the right thing

Impact on society bigger than industry

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Bicsi
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“THE FOURTH INDUSTRIAL REVOLUTION WILL AFFECT THE VERY ESSENCE OF OUR HUMAN EXPERIENCE.”

KLAUS SCHWAB
FOUNDER & EXECUTIVE CHAIRMAN,
WORLD ECONOMIC FORUM
Fusion of our physical, digital & biological worlds

‘Humans will be biologically interconnected with the future technology, developing an interdependency and reliance on its outcomes’
Digital is changing how we experience the physical world
The current reality:

Over 88% of Fortune 500 Firms in 1955 vs. 2020 are gone.

67% of CEOs who participated in the IBM CEO study think that technological disruption is making them reassess strategic direction.

Top 10 “unicorn” companies valued at $1B or more have reinvented the market: Uber, Xiaomi, Airbnb, Palantir, Didi Kuaidi, Snapchat, China Internet Plus, Flipkart, SpaceX, Pinterest.

87% of companies think that digital transformation is a competitive opportunity.
Digital is the defining mega-trend of our time, but the explosive growth has barely begun.

- Mobile
- Big Data/Analytics
- Cloud Computing
- Social Media
- Internet of Things (IoT)

50bn
Internet connected “things” by 2020**, including sensors, RFID chips…

1%
only 1% of what could be connected in the world actually is

35 Days for a new technology to reach a critical mass of 50m users
The Internet of Things (IoT)
It’s Already Here

World Population:
- 6.3 Billion (2003)
- 6.8 Billion (2010)
- 7.2 Billion (2015)
- 7.8 Billion (2020)

Connected Devices:
- 500 Million (2003)
- 12.5 Billion (2010)
- 50 Billion (2020)

Connected Devices Per Person:
- 0.08 per person (2003)
- 1.84 per person (2010)
- 3.47 per person (2015)
- 6.58 per person (2020)

Source: Cisco IBSG

More connected devices than people

Cow transmits 200 MB per year

7,478,012,172
8.5B by 2030
(Source: World Bank)
“As the world gets wired together through the Web and social networks, and as more and more sensors run machines that are talking to other machines across the Internet, we are witnessing the emergence of “Big Data.”

These are the mountains of data coming out of all these digital interactions, which can then be collected, sifted, mined and analyzed — like raw materials of old — to provide the raw material for new inventions in health care, education, manufacturing and retailing.”
The world is running on data

30 Billion
Connected IoT endpoints by 2020

160 Zetta bytes
By 2025

$1.29 Trillion
in value added by the IoT to the global economy in 2021

No industry is immune from disruption

Let’s take a look at three stages of disruption caused by Digital transformation.
Already disrupted

Newspapers
Magazines
Books
Music
Video
Retail
Travel
What has it meant for the newspaper industry?

Many long-standing daily newspapers have died, but the industry hasn’t. It has, however, changed and will continue to change.
Currently being disrupted

Financial Services
Telecommunications
Government
Transportation
Agriculture
Healthcare
Building Management
Next or beginning to be disrupted
Fourth industrial revolution has 5 clearly defined digital reinvention points that all CXO’s must address.
Cognitive Enterprise

Every Company is a Technology Company

Every Company is a Platform Company

Every Company is an Experience
Key Components of the Cognitive Enterprise

1. Market-making Business Platforms

2. Intelligent Workflows

3. Enterprise Experience and Humanity
Chapter 1.

Market-making

Business Platforms
Types of Market-Making Business Platforms

Enterprise Strategic

Enterprise Enabling

Industry

Cross-Industry

Client

- Creates new economies of scale to leverage skills, intelligent workflows, data
- Embeds differentiated workflows that define the next instantiation of competitive advantage
- Creates dramatically more cost effective and flexible front-, middle- and back-office processes

Industry

- Knocks down walls between organizations or industries, radically restructuring to achieve nonlinear growth
- Connects broad categories of complementary products and services in a way that makes experiences more holistic for customers

SUNCOR

UnitedHealthcare

TRADELENS

YARA
TradeLens

TradeLens, an open shipping platform developed by Maersk and IBM, established several big rules to govern how it will operate as well as how participants will interact and derive value.

Results

- Comprises more than 100 different organizations within the platform
- Established 3 guiding principles to govern how platform will operate

TradeLens set a few guiding principles to frame how it will allow participants to interact with and extract value from the platform. These big rules include the ability to immediately contribute or extract value from authorized participants, standardized data sharing and permission model, and open API environment to promote ongoing improvement and innovation.

All participants benefit from seamless, secure sharing of real-time, actionable information, empowering the participants to streamline their supply chains and mitigate problems through predictability and exception handling.
Chapter 2.

Intelligent workflows
Intelligent workflows are enabled through exponential technologies

Warning automatically triggered: Storm near home

Water damage automatically detected by IoT sensors running on 5G

Claim completed and processed with AI and mobile support

Repair services automatically identified and scheduled

Blockchain for ecosystem payments

Litigation review leveraging cognitive solution
Intelligent Workflows affect all aspects of how business will be done

- Workforce and skills
- Blockchain
- 5G
- IoT
- Automation
- AI

Customers

Intelligent workflow

Outcomes

- Cognitive Care in Banking
- Claims Management in Insurance
- Outage Prediction in Energy and Utilities
- Supply Chain Forecasting
- Talent Acquisition Lifecycle
- Smart Quote to Cash

Internal data

External data
Chapter 3.
Enterprise Experience and Humanity
Crédit Mutuel has over 5,000 branches that receive more than 350,000 online inquiries a day. To consolidate its position as number one in customer relations for the banking sector in France, it continued to reinvent the role of client advisor by empowering them with AI to free up time.

Crédit Mutuel launched several AI projects, including an email analyzer to manage high email volumes and a virtual assistant to decrease customer advisor response time. Crédit Mutuel also established a cognitive factory that provides a fertile environment for identifying, building, and deploying new AI solutions.

Client Success Stories

Crédit Mutuel

Crédit Mutuel, one of France’s leading banks, set a bold strategy to infuse AI across all lines of business, positioning itself as the benchmark for relational banking in a digital world.

Results

- Launched 15 cognitive assistants across various lines of business

Aiming to expand cognitive solutions to 100% of the business line of the company

- A cognitive email solution allows the bank to reassign 200,000 working days annually toward training

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Enterprise Experience...

Customer
  Emotional Impact

Employee
  Influencing Behavior

Enterprise
  Storytelling

Ecosystem
  Radical Collaboration
... and Humanity

Skills

Leadership

New Ways of Working
Shukran
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