

ARE WE MENTALLY READY FOR THE NEXT TECHNICAL REVOLUTION

Peter Herrmann

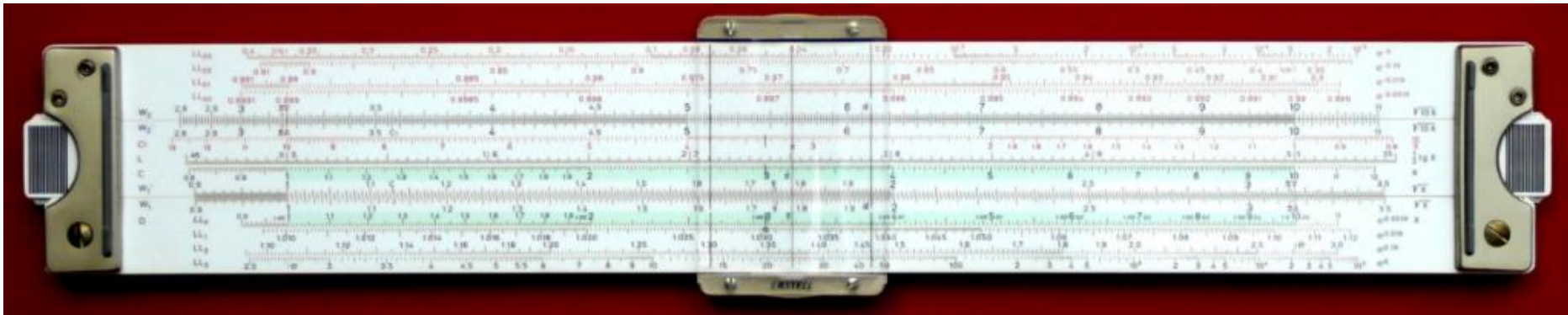
Group Compliance Officer

DISCLAIMER :
*ANY COMMENT MADE HEREIN
IS STRICTLY PERSONAL AND
CANNOT BE CONSIDERED AS
A STATEMENT FROM
ACTELION*

FROM THE GARTNER IT GLOSSARY: WHAT IS DIGITALIZATION?

- ▶ **Digitalization** is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business.

THE DIGITAL REVOLUTION

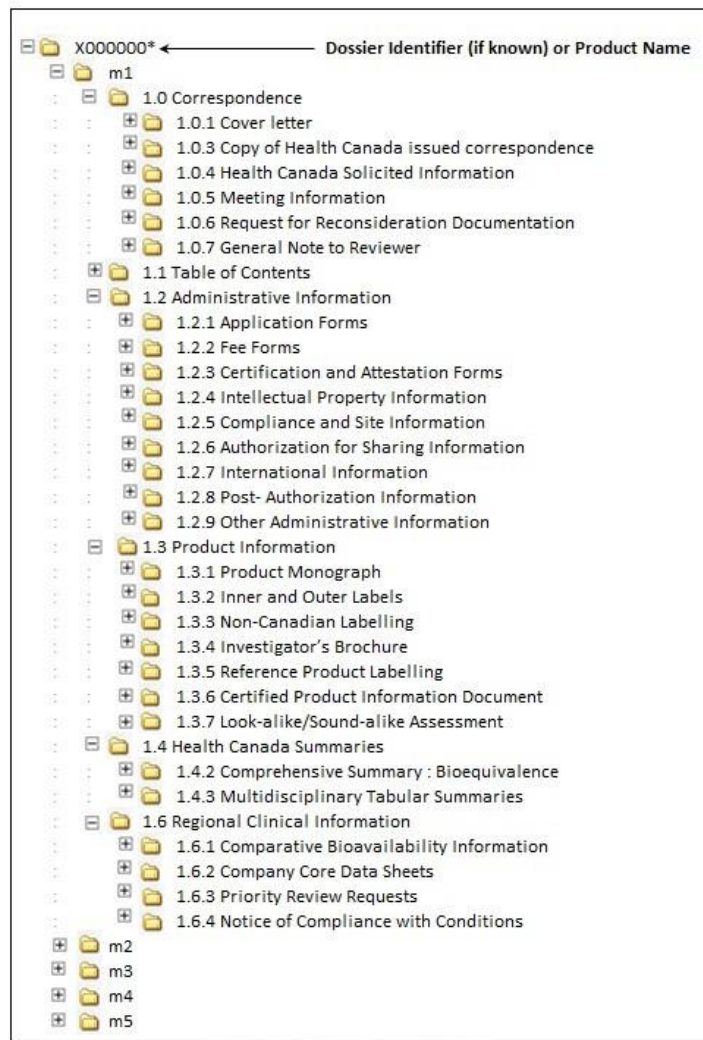


MARKETING AUTHORIZATION APPLICATION

4500 VOLUMES



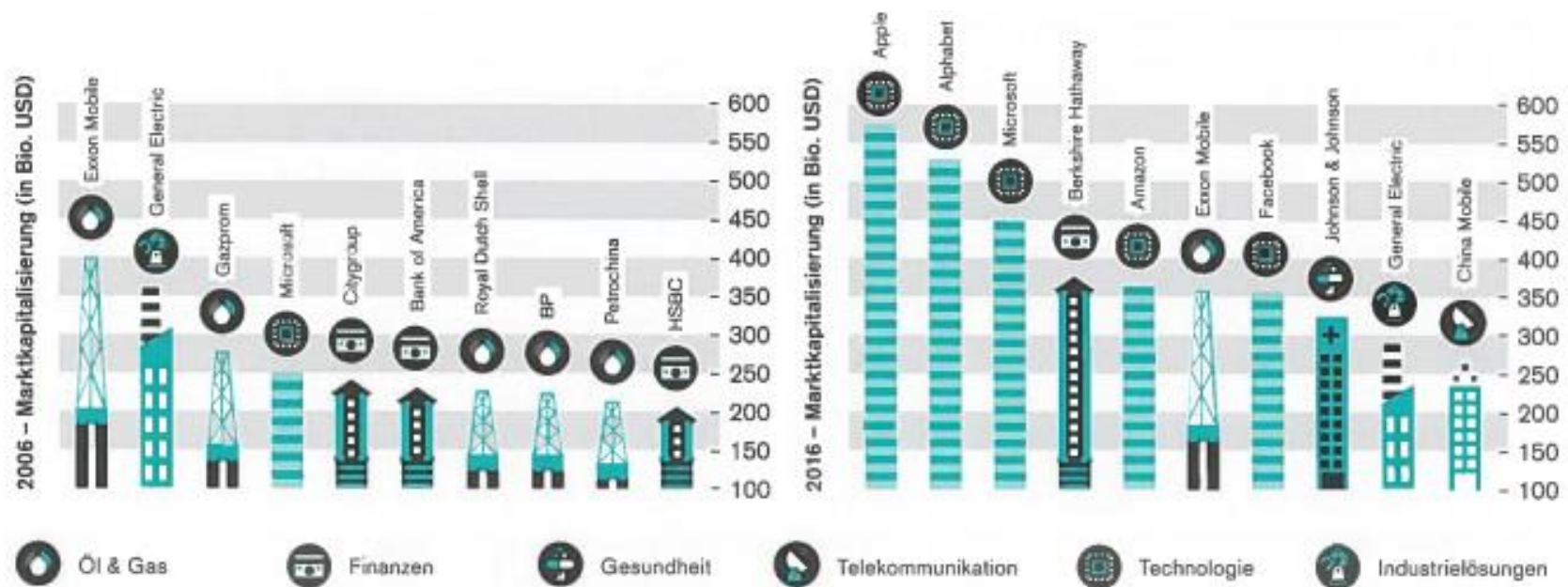
ELECTRONIC COMMON TECHNICAL DOSSIER



* A letter "p" or "h" followed by 6 digits.

THE DIGITAL REVOLUTION

- Source UBS report



GLOBAL MEGATRENDS WILL LEAD TO A NEW BUSINESS CLIMATE

- ▶ Demographic shift to an aging population
- ▶ World urbanization demands access and affordability
- ▶ Shift in economic power demands global innovations
- ▶ Technological breakthroughs disrupt traditional care delivery models

KEY TRENDS DRIVING DIGITAL TRANSFORMATION

- ▶ **Empowered patients.** This is one of the biggest drivers of change in the life sciences industry.
 - Patients are more accountable, informed, and connected than ever before.
 - Use of digital services help to make decisions about their health.
 - Sharing data and experiences with other patients through social apps
- ▶ **Scientific advances.**
 - Technology companies continue to make advances in science, increasing the pace of innovation across the industry.
 - With these technologies companies will create new, innovative drugs and devices, especially in the area of personalized medicine.
 - Continued advancements in the study of genomes, proteomes, and metabolisms, combined with the huge processing power of today's information technology, are driving many innovations.

KEY TRENDS DRIVING DIGITAL TRANSFORMATION

▶ **Healthcare reforms.**

- Healthcare reforms require to focus on cost-effective therapies, higher efficacy, and improved patient outcomes.
- Value-based care and outcome-based payment models will be required. These are fundamentally different from traditional fee-for-service models.

▶ **New competitors**

- New competitors emerge from across the technology landscape. Companies such as GE, Apple, and Google are disrupting traditional health markets as industry boundaries begin to blur.

IMPACT ON PHARMA BUSINESS WITH NEW ENTRANTS

FEW EXAMPLES

- ▶ App on the phone
- ▶ Chip in the pill and App on the phone
- ▶ App allows capturing on real time data which allows patients and Healthcare Provider to manage disease
- ▶ A single home device captures and records patient data
- ▶ DNA sequencing of individuals
- ▶ Interactive patient experience tool

BUT.....

Do-it-yourself CRISPR genome editing kits bring genetic engineering to your kitchen bench



Loz Blain | November 11, 2015



Do-it-yourself CRISPR genome editing kit for bacteria (Credit: Josiah Jayner)

Source: [Indiegogo](#) / New Atlas

AND

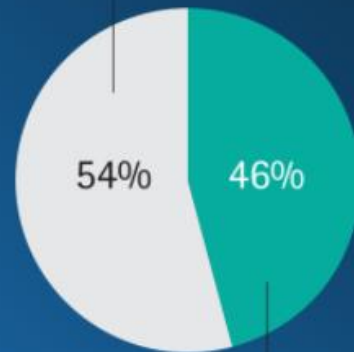
- ▶ How can I mentally deal with my data, such as genetic predispositions?
 - Angelina Jolie example
- ▶ To whom do my data belong?
 - To me – to me?
- ▶ How can I ensure data privacy?
 - Privacy laws
- ▶ Can I trust the organizations handling my data?

DIGITAL TRUST IN THE INTERNET OF THINGS ERA

Consumers aged 55+ and those in Western Europe show the lowest confidence in the security of their personal information.

Overall Response

I'm **not confident** that the security of my personal data is protected on the internet

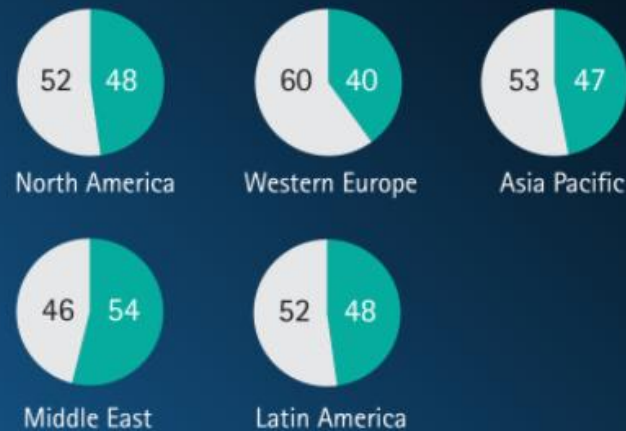


I'm **confident** that the security of my personal data is protected on the internet

Response by Age Group



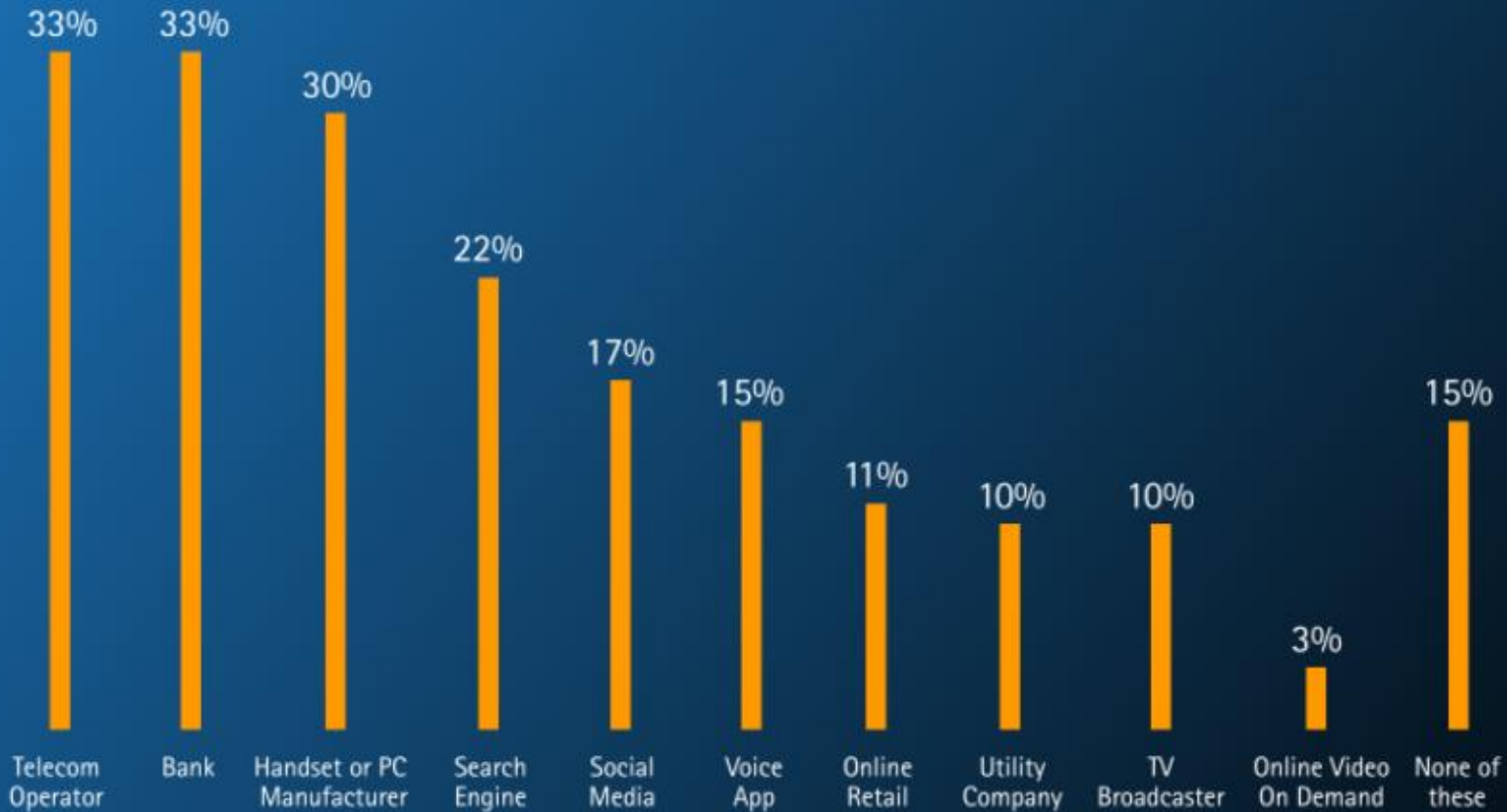
Response by Region



source accenture 2015 Digital consumer survey

DIGITAL TRUST IN THE INTERNET OF THINGS ERA

Companies most trusted with personal data



source accenture 2015 Digital consumer survey



DIGITAL TRUST IN THE INTERNET OF THINGS ERA

90% of consumers feel that a range of activities violate their personal privacy.

38%

Sharing information about me that I do not recall giving permission to be shared



24%

Ads or recommendations based on my online behavior or online searches



23%

Ads or recommendations based on my physical location



22%

Offers (e.g. emails, messages), based on my online purchases



20%

Offers (e.g. emails, messages), based on my offline purchases



33%

Any of these if consumer has not opted in



source accenture 2015 Digital consumer survey

THINK ABOUT DIGITAL ETHICS WITHIN CONTINUALLY EVOLVING BOUNDARIES

- ▶ When new technologies lift constraints, figuring out what you “can” do moves to determining what you “should” do.

Source: [Frank Buytendijk](#) from Gartner

- ▶ The emerging discipline of digital ethics will
 - lack a set of universal rules
 - the speed of technological advances, and an uneasy public, give business leaders no choice but to start defining their own positions in this area.
- ▶ Technology is not a moral agent. Yet it raises question of accountability

SUMMARY: MY VIEW ON RESULTING TRENDS

- ▶ **Outcomes data & value-driven pricing**
- ▶ **Patient power**
- ▶ **Change in insurance payment models**
- ▶ **Increasing Global Regulatory Complexity**
- ▶ **High demand on appropriate education and communication**

THANK YOU.