“Faut-il se laisser digitaliser?”

Pascal Laffineur, CEO The NRB Group

Herstal, 23 January 2019
The NRB Group:

Prime industrial Walloon actor, partner of the digital transformation of its customers
Key figures 2017

- **TOP 3 Of the ICT sector in Belgium**
  - **323 million EUR TURNOVER**
  - **34%** Brussels
  - **18%** Vlaanderen
  - **46%** Wallonie
  - **10%** International

Distribution of turnover by region

- **Finance**
- **Public & Social**
- **Utilities**
- **Industry**
- **Healthcare**

Distribution of turnover by sector
COMPREHENSIVE ICT SERVICES

END-TO-END SERVICE OFFERING

Applications  Cloud  Infrastructure  Consultants

PREFERRED PARTNER OF THE TOP OF GLOBAL PROVIDERS

IBM  Cisco  Amazon  Microsoft  Google  SAP
TRANSFORMATION

LOADING...
CHALLENGE
Extinction timeline* 1950-2050

* Existence insignificant beyond this date
Real threat?

Unprecedented Pace of Change

Out Innovated. Couldn't Simplify.

52% of the Fortune 500 firms since 2000 are gone

1B people in social network will rewire business and personal boundaries

Millennials transform customer demands and the workplace

New + Disruptive business models will accelerate change and innovation

50B web-enabled devices by 2020 will create an intelligent universe
Real threat?
Fast...

NUMBER OF YEARS IT TOOK FOR EACH PRODUCT TO REACH 50 MILLION USERS

<table>
<thead>
<tr>
<th>Product</th>
<th>Years</th>
</tr>
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<tbody>
<tr>
<td>Automobile</td>
<td>62</td>
</tr>
<tr>
<td>Television</td>
<td>22</td>
</tr>
<tr>
<td>PayPal</td>
<td>5</td>
</tr>
<tr>
<td>Telephone</td>
<td>50</td>
</tr>
<tr>
<td>ATM</td>
<td>18</td>
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<tr>
<td>ATM</td>
<td>18</td>
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<tr>
<td>Debit Card</td>
<td>12</td>
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<tr>
<td>Credit Card</td>
<td>28</td>
</tr>
<tr>
<td>Internet</td>
<td>7</td>
</tr>
<tr>
<td>YouTube</td>
<td>4</td>
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<tr>
<td>Facebook</td>
<td>3</td>
</tr>
<tr>
<td>Twitter</td>
<td>2</td>
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<tr>
<td>Google</td>
<td>8</td>
</tr>
<tr>
<td>Facebook</td>
<td>6</td>
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<tr>
<td>Cloudera</td>
<td>6</td>
</tr>
<tr>
<td>Tesla</td>
<td>5</td>
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<tr>
<td>Average Unicorns</td>
<td>4</td>
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<tr>
<td>Uber</td>
<td>4</td>
</tr>
<tr>
<td>CloudFlare</td>
<td>3</td>
</tr>
<tr>
<td>Airbnb</td>
<td>3</td>
</tr>
<tr>
<td>Snapchat</td>
<td>2</td>
</tr>
<tr>
<td>Xiaomi</td>
<td>2</td>
</tr>
</tbody>
</table>

Time taken to reach a valuation of $1 billion or more

Source: World Economic Forum / Accenture analysis
Falling cost of technologies

- **Drones**
  - 2007: $100,000
  - 2013: $700

- **3D Printing**
  - Cost averages for equivalent functionality
  - 2007: $40,000
  - 2014: $100

- **Industrial Robots**
  - Cost per unit
  - 2007: $550,000
  - 2014: $20,000

- **DNA Sequencing**
  - 2000: $2.7 billion
  - 2007: $10 million
  - 2014: $1,000

- **Smartphones**
  - Cost of model with similar specifications
  - 2007: $499
  - 2015: $10

- **Solar**
  - 1984: $30
  - 2014: $0.16

- **Sensors (3D Lidar)**
  - 2009: $30,000
  - 2014: $80

Source: World Economic Forum / Accenture analysis based on research in Exponential Organization by Salim Ismail.
We hate exponentials...

Accelerating effects of base technologies

Exponential evolution
(Second half of the chess board)

Source: World Economic Forum/Accenture analysis
Can digital create value for industry and for society?
Industrial and societal impact

Model of World Economic Forum 2018

- **VALUE IMPACT OF DIGITAL TRANSFORMATION**
  - **INDUSTRY IMPACT**
    - Value Migration and Value Addition
  - **SOCIETAL IMPACT**
    - Society and Environment
    - Consumer Benefits
    - Labour
  - Free Cash Flows / Operating Profits
    - Value Drivers:
      - Emissions of CO₂, NOₓ, SOₓ etc.
      - Lives Saved / Security
      - Cost Savings
      - Time Savings
      - Net Job Creation
      - Injuries / Accidents Avoided
Societal impact

Safe lives
- Usage based insurance
- Self driving cars

Reduce carbon emissions
- Shared warehousing
- Asset performance management

Create trust/transparency
- B2B platforms
- Peer to peer reviews

The introduction of usage-based insurance for cars clearly illustrates how unaligned incentives can derail societal gains. Our value-at-stake analysis estimates that usage-based insurance could save 160,000 lives by 2025.

26 billion metric tons

Estimate of net CO₂ emissions that could be avoided (to 2025) from digital transformation of just three industries: electricity (15.8 billion metric tons), logistics (9.9 billion) and automotive (540 million).
But...
**Is it so brilliant?**

Apple shares over the last 6 months

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**Tesla Finally Turns A Profit, And Promises To Keep Doing It**

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**Facebook**
The social network’s stock market value plunged by more than £90bn — the largest one-day drop in corporate history — as it felt the effect of the Cambridge Analytica data scandal. The group made more than £5bn (£3.8bn) profit in the last three months — slightly ahead of expectations — but some 3 million Europeans quit the website amid concerns about what Facebook does with personal data. Finance chief David Wehrner warned revenue growth was likely to slow, while costs soared by 50% to £7.4bn as the company spent vast sums on improving data security.

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**Spotify**
In only its second financial report since flotation, the music streaming service reported an 8 million rise in the number of paid subscribers, to 83 million during the second quarter. Spotify has yet to record a profit, but the increase suggests it is still staving off competition from deep-pocketed rivals such as Amazon and Apple for music streaming customers. Its operating loss widened from €79m to €90m (£80m).
Predictions may sometimes be misleading...
Predictions may sometimes be misleading...

Who said this, and when...

"Books will soon be obsolete in schools. Students will be taught through the eyes. Our school system will be completely changed within ten years."

Thomas Edison, 1913

Interview New York Dramatic Mirror
What is in it for us?
What is in it for us?

1. Take some advises (but not too many)
War For Talent in IT: 'Beste aanval is de verdediging'

Het tekort aan IT'ers op de arbeidsmarkt was nog nooit zo groot. De Belgische economie heeft dit jaar 16.000 extra digitale experts nodig: dubbel zoveel als tien jaar geleden. Om het probleem het hoofd te bieden, is het noodzakelijker dan ooit om sterk talent te behouden en te ontwikkelen, schrijft Frédérique Bruggeman, managing director bij Robert Half Belux.

EXECUTIVE SUMMARY

Information and communications technologies (ICT) play an increasingly important role in our professional and private lives, and digital competence is of growing importance for every individual. In the future, nearly all jobs will require digital skills.

However, European Commission figures show that two fifths of the EU workforce have little or no digital skills. In addition, despite continued high levels of unemployment, there could be 756,000 unfilled jobs in the European ICT sector by 2020.

End-user organizations need to find a way to tap into the international IT labor market, mostly via external providers. Scarce internal talent must be fostered.
Megatrend 2 – Globalisation has reached its top, the pendulum is switching back

• The IT industry was and is amongst the most global thinking industries:

  ‘You do not need to know where your data is located, it is in the cloud stupid, it is safer there than in any other datacenter’.

• Due to major data leaks, incidents of espionage via IT systems, consequences of the Patriot Act, increased data privacy legislation (GDPR), most companies realize that only a hybrid solution public/private cloud are realistic solutions to the problem. Managing such hybrid solutions is more complex, not more easy for end-user organizations and requires classification of those systems along those lines.

• Large organizations such as Microsoft have understood this and partner with European players (eg TSystems) to overcome such issues.

• The need for local datacenter capacity has not and will not quickly disappear.

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End-user organizations need to prepare for hybrid solutions. Data classifications is more than ever needed in order to correctly implement such hybrid solutions.
Megatrend 3 – Changing the business models allows the big tech companies to take control and invest massively in large scale standardized solutions

- IT was a closed industry from the 60s to the 90s. If you bought one component from a specific supplier you also needed to buy other components from the same supplier (eg IBM Hardware, IBM database, IBM software, ...)

- IT became an open industry, as of the 90s. The client can buy from who he wants and the open standards create the interoperability which made all this work. (eg HP Hardware, Oracle Database, SAP SW)

- The last 10 years, IT is becoming a much more integrated industry (eg Apple iPhone, Office 365, Amazon Cloud, ...), so back to closed systems.
- Cloud offerings are integrated offerings creating lock-in for the users and a guaranteed revenue stream for the providers
- Advantages for the client are one-stop-shopping at the cost of flexibility and lock-in. Advantages for the supplier are a guaranteed revenue stream and more control over its client
- The change in business model is driving the IT industry and the major tech players are forcing their clients to comply to this new business model. This allows them to make huge investments that must result in large scale solutions.

End-user organizations have to realize this and balance their buying behavior in order to decrease such lock-in situations. Smaller suppliers cannot compete with the big tech companies and their large scale solutions and need to find smart solutions avoiding competition with the big tech companies but with a similar business model.
Megatrend 4 – End-of-life technologies take much more time to disappear than ‘expected’ and represent high margin opportunities for those service providers who play it smart.

- IBM Mainframe, Tandem Nonstop, ... but also traditional telephony (PBX) died in the 80s later in the 90s even more later in the 00s but are now still alive and kicking!
- The cost of replacing legacy technologies as well as the low cost to maintain is mostly underestimated by end-users and end-of-life technologies survive much longer than anticipated. As supply drops (due to lack of focus) while demand remains stable, margins (can)go up!
- For IBM MF environments, replacement strategies are limited:
  - Technical port to other systems: in such case the way-of working remains, but the underlying Hardware has been replaced.
  - Move to a software package; this is what happened with MFs in the Manufacturing world in the 90s being replaced by ERP. In other industries, the replacement is more difficult and depends on the existence and market viability of the packages.
  - Predictability of such replacement is very high. Suppliers can financially predict the break-even point for replacing the Mainframe at their client and price accordingly.
- The real issue is less the technology, but the increasing lack of human competencies in such legacy technology, this in combination with the war for IT talent requires an answer from service providers.

End-of-life technologies can often save costs for the end-user while creating a profitable business for the service providers. Prepare for shortage of human competencies in such legacy technology.
How to move forward?

**Evolution:**
no disruption of the basic business model

**Revolution:**
disruption of the basic business model

"Companies need to learn how to overcome the innovator's dilemma – the fact that new ideas that cannibalize the existing business can see slower adoption within organizations. Senior management can be protective of their existing businesses, but they need to overcome this to make the most of digital opportunities."

Paul Mitchell, General Manager, Technology Policy, Microsoft Corporation, USA
What is in it for us?

2. Meet your clients *(never too much)*
### BARRIERS TO DIGITAL TRANSFORMATION

Percentage of respondents who said each of the following was a significant impediment/challenge to their organization's digital transformation efforts:

- **Culture:** 55%
- **Process:** 43%
- **Technology:** 30%

**Source:** Harvard Business Review Analytic Services Survey, July 2018

### The Two Biggest Inhibitors to Digital Business Progress

Percentage of respondents, top two ranking:

<table>
<thead>
<tr>
<th>Inhibitor</th>
<th>1st Choice</th>
<th>2nd Choice</th>
<th>Sum of Top Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of appropriate talent and capability in the workforce</td>
<td>15%</td>
<td>14%</td>
<td>30%</td>
</tr>
<tr>
<td>Concern about the cyber-risks of digital business</td>
<td>11%</td>
<td>13%</td>
<td>24%</td>
</tr>
<tr>
<td>Age or inflexibility of current technology assets</td>
<td>11%</td>
<td>10%</td>
<td>21%</td>
</tr>
<tr>
<td>Lack of investment funding</td>
<td>11%</td>
<td>9%</td>
<td>20%</td>
</tr>
<tr>
<td>Lack of executive management leadership drive and execution capability</td>
<td>11%</td>
<td>7%</td>
<td>18%</td>
</tr>
<tr>
<td>Squabbling and confusion about who does what in digital</td>
<td>9%</td>
<td>7%</td>
<td>16%</td>
</tr>
<tr>
<td>Ineffective organizational structure</td>
<td>8%</td>
<td>7%</td>
<td>15%</td>
</tr>
<tr>
<td>Lack of executive management creativity/insight/vision</td>
<td>8%</td>
<td>6%</td>
<td>14%</td>
</tr>
<tr>
<td>Lack of owner/stakeholder/board of directors belief and commitment</td>
<td>6%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Nothing, we have no inhibitors</td>
<td>10%</td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>

Base: Have management initiative, n = 294
Which of the following are the two biggest inhibitors to your company’s digital business initiative progress?

ID: 354611 © 2018 Gartner, Inc.

Source: Gartner (April 2018)
CONNECTED ECOSYSTEMS of ORGANISATIONS, PEOPLE & THINGS

Digital Platform for (Data driven) added value services to the end-user

- ICT Infra & cloud services
- Core business & back office applications
- End user applications
How? NRB will leverage your digital transformation, offering

**Infrastructure & technology:**
- Hybrid cloud platform
- Mobile, web and back end application development
- Big data platform
- IoT and security experts & tools
- and integration expertise.

**Co-creation:**
NRB’s consultants set up multi-disciplinary projects in collaboration with customers & partners, assessing current and potential service and business models.

**Coaching:**
NRB consultants advice and accompany organisations through their digital journey

**Ecosystems:**
NRB federates ecosystems in various sectors to boost innovation (health care, insurances, utilities, smart city,...)

**Competences & capacities:**
NRB partners with universities, research centres and public organisations to invest in trainings programs.
What is in it for us?

3. Trust your people (as much as possible)
L’emploi humain est assuré puisqu’il faudra bien les construire, tous ces robots !

Mais bon... on peut s’en occuper aussi.
What will be the impact of the digital transformation on each function? (most impacted functions)

- Administrative & office jobs: -7% decrease
- Finance & accounting: -3% decrease
- HR: 0% change
- Manufacturing & production: 24% increase
- Customer facing jobs: 15% increase
- IT: 14% increase

Increase of resources
Decrease of resources
The impact of digitalisation on the Belgian labour market
- Previsions Agoria 2030 -

- 4.5 million workers have to upgrade their skills regularly
- 584,000 open vacancies in Belgium by 2030
- 310,000 working people and job seekers to ‘re-skill’
- 95 billion euro GDP at risk

Source: Agoria: “La digitalisation et le marché du travail belge” - September 2018
Jobs built on data skills are showing the strongest growth

Average compound employment annual growth rate %, 2015–2020

<table>
<thead>
<tr>
<th>Job category</th>
<th>-4%</th>
<th>-2</th>
<th>0</th>
<th>+2</th>
<th>+4</th>
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</thead>
<tbody>
<tr>
<td>Computer and mathematical</td>
<td></td>
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<td></td>
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<tr>
<td>Architecture and engineering</td>
<td></td>
<td></td>
<td></td>
<td>+2</td>
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<tr>
<td>Management</td>
<td></td>
<td></td>
<td>+2</td>
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<tr>
<td>Business and financial operations</td>
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<td></td>
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<tr>
<td>Sales and related</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Installation and maintenance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Construction and extraction</td>
<td></td>
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<tr>
<td>Arts, design, sports, entertainment, and media</td>
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<td></td>
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<tr>
<td>Manufacturing and production</td>
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<td></td>
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<tr>
<td>Office and administrative</td>
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How to deal with Darwin?
Innovation life cycle

Core

Context

I. Invent differentiated offering

II. Deploy differentiation at scale

III. Manage mission critical processes at scale

IV. Offload

Fund next innovation? Lack of Skills

- Risk
- Mission critical
- Non Mission Critical

Differentiate

- Core
- Context
How to redirect the inertial momentum of your company:

1. Conduct a core/context analysis of your current business
2. Conduct a resource allocation analysis to complement your core/context analysis
3. Set a more ambitious agenda
4. Plan out your moves as a team
5. Focus on time to market
6. Get the gears moving
7. Keep the gears moving

→ Keep all parts of the organisation in perpetual motion
The Performance – Values Matrix

- **High performance, High value match**
- **High performance, Low value match**
- **Low performance, High value match**
- **Low performance, Low value match**

- Last chance
- Second chance
Which data skills should you learn first?

- **Very useful**
  - Plan
  - Learn

- **Not useful**
  - Ignore
  - Browse

- **Time-consuming to acquire**
- **Not time-consuming to acquire**

Source: Filtered

HBR
An example of how to plot data skills on a 2x2 matrix

Source: Analysis of internal data learning needs by Filtered
INVESTING IN TOMORROW’S TALENTS

A PLACE FOR TALENT AND EXCELLENCE

NRB Academic Big Data Chair
Partner of the NRB’s Smart city program
Student traineeship programs

University of Namur
Shareholder of The NRB Group’s activity for local authorities (Adinfo)

NRB partner for the Master in Data Sciences
NRB pro-active HR strategy

30 recruitment events in 2018:
- HEC Liège
- UCL IT jobs exchange
- HELMO Liège
- ULiège forum des entreprises

Participation to Hackatons

19 Young Graduates recruited in 2018

15 Traineeships in 2018

Total number of recruitments in 2018: 167 (*)
NRB pro-active HR strategy

Software Academy by The NRB Group

Training in IT development, with a view on a full time job at NRB, organised in partnership with Forem and Technifutur
1. Take some advises (but not too many)
2. Meet your customers (never too much)
3. Trust your people (as much as possible)
Thank you!

Pascal Laffineur, CEO The NRB Group
Any questions?

Pascal Laffineur, CEO The NRB Group

Herstal, 23 January 2019