• NEW TECHNOLOGIES & TRADE
• ADOPTION OF TECHNOLOGY IN BUSINESS
• DIGITAL TRADE RESTRICTIONS
• DIGITAL TRADE & THE WTO
OUTLINE

• NEW TECHNOLOGIES & TRADE
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NEW TECHNOLOGIES & TRADE

• Internet of Things
NEW TECHNOLOGIES & TRADE

- Internet of Things
- Artificial Intelligence
NEW TECHNOLOGIES & TRADE

• Internet of Things
• Artificial Intelligence
• Blockchain
NEW TECHNOLOGIES & TRADE

- Internet of Things
- Artificial Intelligence
- Blockchain
- 3D Printing
A laser hardens the powder and your model gets its shape.
3D PRINTING
3D PRINTING

• Tariffs & taxation
• IP
• Liability
• Safety
• Certifications
• …
DIGITAL FABRICATION
DIGITAL FABRICATION
OUTLINE

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HOW COMPANIES ADOPT NEW TECHNOLOGIES: CHALLENGES AND IMPACT ON BUSINESSES
LET’S HAVE A LOOK AT THE CURRENT STATE OF THE INTERNET

2019
This Is What Happens in An
Internet Minute
WHO IS LEADING THIS INNOVATION?

During the 1990s a great number of Internet-based companies were founded in Silicon Valley during the dot-com bubble.

These companies became to be internationally known as **start ups**.

Some of the companies founded during that era are now the some of biggest tech companies today: Apple, Amazon (AWS) and Google (Alphabet).
WHAT IS A START UP?

A start up is:

... solving a problem.

... more questions than answers.

... searching for product/market fit.

... filling a gap in the market.

... changing the ways things are traditionally done.

... about **making change**.
The Unicorn Landscape
Breaking down the world’s 325 unicorns by country, sector, and valuation

The unicorn club is growing. These fast-growing private companies, each valued at over $1 billion, have been multiplying fast and according to CB Insights, more than 119 new companies joined the global unicorn club since last year.

Let’s take a look at how the current landscape breaks down by sector, country, and valuation.

**TOP 10 UNICORNS BY VALUATION**

1. **ByteDance** - $75B
2. **Uber** - $72B
3. **Didi Chuxing** - $56B
4. **Lilium** - $48B
5. **WeWork** - $47B
6. **JUUL Labs** - $38B
7. **Airbnb** - $29B
8. **Stripe** - $23B
9. **SpaceX** - $19B
10. **Epic Games** - $15B

**Source:** Visual Capitalist
Nearly half of the world’s unicorns come from the U.S., including 7 of the 10 largest by valuation.

Roughly 3 of every 10 unicorns come from China.

Outside of these six countries, the rest of the world has only produced 32 of the world’s unicorns.
Seven unicorns—including Uber, WeWork, Airbnb, and ByteDance—account for almost 30% of all of the value.

There is a steep drop from the top. The bottom 280 unicorns only account for 42.5% of the total value.
1. Cloud computing and modern software development practices
2. Smartphones and new channels
3. Social Media
4. Low interest rates - investment in high-risk, high-yield ventures
5. Natural monopolies and high profits
6. Limited physical assets
7. Light regulation

Source: 12 Challenges Startup Culture Must Overcome In Order To Thrive in 2017, Matt Hunckler, Forbes, Mar 22, 2017
CHALLENGES FOR EARLY START UPS

1. Talent and diversity
2. Product-market validation
3. Limited resources
4. Lack of focus
5. Lack of structure
6. Competition
7. Managing constant change
8. Communication
9. Managing people and culture

Source: Visual Capitalist
CHALLENGES FOR UNICORNS

1. Low margins: prices are discounted to supercharge revenue growth
2. Low customers loyalty
3. Some unicorns lack the economies of scale and have barriers to entry
4. Tighter regulation will constrain their freedom

Source: The trouble with tech unicorns, The Economist, Apr 17th 2019
1. Digitisation involves standardising business processes. It is associated with cost cutting and operational excellence.


3. Digitisation is the operational backbone of many businesses.
Many businesses believe that by digitizing they are becoming digital.

However... “becoming digital” involves a very different kind of transformation.
SO... WHAT IS DIGITAL TRANSFORMATION?

Digital transformation is the profound transformation of business activities, competencies, and business models to fully leverage the opportunities of digital technologies.

Digital transformation is the act of radically changing how your organisation works, so that it can survive and thrive in the Internet era.
**Figure 1: A Comparison of Digital and Digitized**

<table>
<thead>
<tr>
<th></th>
<th>Digitized</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td>Operational efficiency, reliability, and cost savings</td>
<td>Revenue generation and growth</td>
</tr>
<tr>
<td><strong>Technology Requirement</strong></td>
<td>Operational backbone (e.g., ERP, CRM, shared services)</td>
<td>Digital offerings platform with reusable technical and business services for offerings</td>
</tr>
<tr>
<td><strong>Transformation Focus</strong></td>
<td>Process discipline; business standardization where needed</td>
<td>Rapid innovation; introduction of a new value proposition</td>
</tr>
</tbody>
</table>

**Source:** *Digitized is Not Digital*, Jeanne W. Ross, Cynthia M. Beath, Ina M. Sebastian, CISR, Oct. 2017
BUSINESS TRANSFORMATION

The goal should not be digital transformation, but a business transformation. To be FUTURE READY.

To become future ready a company must transform two dimensions:

1. Customer experience
2. Operational efficiency
HOW DO COMPANIES ADOPT NEW TECHNOLOGIES?

1. Companies can create digital products by starting with a small, simple product or service - like a start-up.

2. Companies will rely on their operational backbone to ensure the reliability and scalability of their basic transactions.

3. However, for digital transformation they will need to architect a second platform to provide access to a reusable digital business capabilities.
A ROADMAP TO DIGITAL BUSINESS TRANSFORMATION

THE FOUR PATHWAYS TO FUTURE READY

SOURCE: FUTURE READY? PICK YOUR PATHWAY FOR DIGITAL BUSINESS TRANSFORMATION, PETER WEILL, STEPHANIE L. WOERNER, CISR, SEPT. 2017
WHICH PATHWAY TO CHOOSE?

• Pathway 1: customer experience is around average.

• Pathway 2: your customer experience is below average and there are new scary competitors.

• Pathway 3: customer experience is a problem and you have identified a few areas of improvement. Start with those, then focus on operations and repeat.

• Pathway 4: there is no way to build a new culture, customer experience and operations fast enough to survive.
CONCLUSIONS

1. To thrive start-ups need to grow up fast and have a solid business model that will yield long term revenue and not just growth.
2. Digital Transformation equals radically changing your organisation so it can thrive in the Internet era.
3. DT is hard because it’s primarily a function of people and behaviours and relationships.
4. To succeed you need a Business Transformation: make people understand the why and not just the what.
5. Communication is KEY. Developing soft skills is becoming a necessity to succeed in business.
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Digital Trade Restrictiveness Index (DTRI)

Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)
Average DTRI by Region

Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)
Average DTRI by Income level

Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)
Figure B1: DTRI and Level of Development

Source: DTRI Report, p. 21
GVC PARTICIPATION & DTRI

Source: Van der Marel (2018)
Digital Trade Restrictiveness Index

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Hosuk Lee-Makiyama (hosuk.lee-makiyama@ecipe.org),
and Erik van der Marel (erik.vandermarel@ecipe.org)
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

13 main areas:

1. Tariffs and trade defence
2. Taxation and subsidies
3. Public procurement
4. Foreign investment
5. IPR
6. Competition policy
7. Business mobility
8. Data policies
9. Intermediary liability
10. Content access
11. Quantitative trade restrictions
12. Standards
13. Online sales and transactions
OECD DIGITAL SERVICES RESTRICTIVENESS INDEX

OECD Trade Policy Papers No. 221

The OECD Digital Services Trade Restrictiveness Index

Janos Ferencz
OECD DIGITAL SERVICES RESTRICTIVENESS INDEX

Figure 5. Digital STRIs (2018)

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD Digital STRI.
Figure 6. Policy changes affecting trade in digitally enabled services (2014-2018)

Panel A: Nature of changes over the period 2014-2018

Panel B: Number of changes across years

Source: OECD Digital STRI.
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

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PUBLIC PROCUREMENT

1. Preferential purchase schemes covering ICT products, services

2. Surrendering of patents, source code etc.

3. Technology mandate (encryption, formats)
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

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1. Lack of liberalisation of the telecommunication sector

2. Government ownership of shares of the incumbent telecommunications operator

3. Anti-competitive practices in the telecommunication sector
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

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CROSS-BORDER

1. Restrictions cross-border on data flows (data localisation)

DATA POLICIES

DC

2.

3.

4.

5.

Source: Ferracane (2017).
DATA POLICIES: SUB-INDEX

Data Restrictiveness Index (0−1)

DATA POLICIES: SUB-INDEX

Source: Ferracane and Van der Marel 2018)
THE COST OF DATA PROTECTIONISM

• STRICT CROSS-BORDER DATA POLICIES INHIBIT
  SERVICES’ IMPORTS: average imports’ increase 5 percent
  (Ferracane & Van der Marel, 2018)

• STRICT DOMESTIC DATA POLICIES INHIBIT
  PRODUCTIVITY: average TFP gain 4.5 percent
  (Ferracane, et al., 2018)
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

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INTERMEDIARY LIABILITY

1. Framework providing a safe harbor
2. Strict notice and takedown regime
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CONTENT ACCESS

1. Censorship, filtering
2. Bandwidth, net neutrality
DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

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STANDARDS

1. Restrictions related to telecom standards

2. Restrictions related to product safety certification (EMC/EMI, radio transmission)

3. Product screening and testing requirements

4. Encryption requirements
Digital Trade Restrictiveness Index (DTRI)

13 main areas:

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ONLINE SALES AND TRANSACTIONS

1. Barriers to fulfilment

2. Domain name (DNS) registration requirements

3. Online sale restrictions on certain products

4. Discriminatory consumer protection law for online sales
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WTO

• 164 members

• Trade in goods and services

• GATS: General Agreement of Trade in Services

• Dispute settlement

• Restrictions to data flows? Digital services?
PILLARS OF GATS DISCIPLINE

SCHEDULE OF COMMITMENTS

W/120 list
COVERAGE OF GATS COMMITMENTS

- US—Gambling
- China—Audiovisuals
- China—Electronic Payments
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)
NEW ISSUES TACKLED IN REGIONAL TRADE AGREEMENTS

1. Cross-border data flows;
2. Location of computing facilities;
3. Privacy and data protection;
4. Cybersecurity and spam control;
5. Source code;
6. Custom duties on electronic transmissions;
7. Confidence-enhancing measures: electronic signatures, online authentication, consumer protection…
3 main developments at the 11th Ministerial Conference in Buenos Aires (2017):

1. Continuation & reinvigoration of 1998 Work Programme
2. Renewal of the moratorium on custom duties until 2019
JOINT STATEMENT ON ELECTRONIC COMMERCE INITIATIVE (JSI)

Discussions structured under 4 themes:

- Enabling digital trade/e-commerce
- Openness and digital trade/e-commerce
- Trust and digital trade/e-commerce
- Cross-cutting issues including development, transparency & cooperation
January 2019: World Economic Forum

Joint Statement on E-commerce issued by 76 WTO Members

Statement confirms the group’s “intention to commence WTO negotiations” on e-commerce

2 objectives:

• “will seek to achieve a high standard outcome”

• “with the participation of as many WTO Members as possible”
THANK YOU

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REFERENCES

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Ferracane, M.F., H. Lee-Makiyama & E. Van der Marel (2018), Digital Trade Restrictiveness Index, ECIPE.


Digital Trade Estimates database: www.ecipe.org/dte/database