The Association of Users of Information Systems in Morocco (AUSIM) is a non-profit organization founded in April 1993. Its members are many prominent structures (Administration Offices, Banks, Insurance, Industrial Enterprises, ...), the AUSIM actively work in the spirit of developing and promoting the use of Information Technology in Morocco.

As such, it aims to:

- The exchange of experiences and technical, scientific and cultural information between members and by organizing meetings, seminars and conferences, both in Morocco and abroad.
- The creation and maintenance of good fraternal relations between its members and strengthening links with other similar associations in Morocco and abroad.
- The dissemination of knowledge and information related to IT.
- Active participation in major national and sectorial reforms related to Information Technology.
Insight 1: Plummeting costs
Exponential Growth of Computing for 110Y

Exponential Growth of Computing for 110 Years
Moore's Law was the Fifth, not the First, Paradigm to Bring Exponential Growth in Computing.

Logarithmic Plot

Calculations per Second per $1000

Electromechanical | Relay | Vacuum Tube | Transistor | Integrated Circuit

Year: 1900, 10, 20, 30, 40, 50, 60, 70, 80, 90, 2000, 08, 10

Intel

INTEL

Association des Utilisateurs des Systèmes d’Information au Maroc
Cost Per GFLOPS

1961
$ 8.3 trillion

1984
$ 42.8 million

1997
$ 42,000

2007
$ 52

2015
$ 0.08
iPhone 8

150 GFLOPS

2017 cost: $1000

1997 cost: $4,830,000

1984 COST: $5 BILLION

BACK IN TIME
## Plummeting costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost (averages) for equivalent functionnality</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D printing</td>
<td>$40,000 (2007) To $100 (2017)</td>
<td>400x in 7Y</td>
</tr>
<tr>
<td>Industrial robots</td>
<td>$500,000 (2008) To $22,000 (2016)</td>
<td>23x in 5Y</td>
</tr>
<tr>
<td>Drones</td>
<td>$100,000 (2007) To $700 (2016)</td>
<td>142x in 6Y</td>
</tr>
<tr>
<td>Solar</td>
<td>$30 per kWh (1984) to $0.16 per kWh (2014)</td>
<td>200x in 20Y</td>
</tr>
<tr>
<td>Sensors (3D LIDAR sensor)</td>
<td>$20,000 (2009) To $79 (2016)</td>
<td>250x in 5Y</td>
</tr>
<tr>
<td>Biotech (DNA sequencing of one whole human DNA profile)</td>
<td>$10 million (2007) To $1,000 (2016)</td>
<td>10,000x in 7Y</td>
</tr>
<tr>
<td>Neurotech (BCI devices)</td>
<td>$4,000 (2006) To $90 (2015)</td>
<td>44x in 5Y</td>
</tr>
<tr>
<td>Medicine (full body Scan)</td>
<td>$10,000 (2000) To $500 (2016)</td>
<td>20x in 14Y</td>
</tr>
</tbody>
</table>
Insight 2: Abundance Vs Scarcity
Abundance

THE FUTURE IS BETTER THAN YOU THINK
• Infinite Computing
• Sensors & Networks
• Robotics
• 3D/4D Printing
• Synthetic Biology
• Digital Medicine
• Nano Materials
• Artificial Intelligence
• Cognitive Sciences
Abundance

1996
M.Kap: 28 B$
Emp: 140,000

2012
Bankrupt
Emp: 17,000

2015
M.Kap: 37 B$
Emp: 13 (2012)
Google Loon / Facebook Internet drones

Internet Antenna on the ground sends signals to balloon

Everest 29.092 Ft

Airliner 30.000 Ft

12 Miles

6 Miles
The Qualcomm Tricorder X Prize
6 Ds
6 Ds

- Digitized
- Deceptive
- Disruptive
- Dematerialize
- Demonetize
- Democratize
Insight 3

EXPOENTIAL ORGANIZATIONS
Industries by Information enablement

- **Information-Only Products**
- **Physical Products with information-based revenue Streams**
- **Physical Products that are Information-Enabled**
The disruption

« Competition for many America’s fortune 500 companies is no longer coming from China and India, it’s increasingly coming from two guys in a garage with a startup leveraging exponentially growing technologies » P. Diamondis

«YouTube went from a startup funded by Chad Hurley’s personal credit cards to being purchased by Google for 1.4 $b in less than 18 months »
Doubling down!

- Community’s productivity = \(f(\text{human power})\)
  - Man and woman to hunt, gather and build
  - Children to assist
    - Double the hands ➔ Double the output
    - Domesticate the beasts of burden ➔ Output increased

Equation is still linear!
Market Cap to a billion
Exponential Organizations (ExO)

An **ExO** is one whose impact (or output) is disproportionally large – at least 10x larger compared to its peers because of the use of new organizational techniques that leverage accelerating technologies.
ExOs Attributes
(External / Internal)
Massive Transformative Purpose (MTP)

Think Big!

TED: « Idea worth spreading »
Google: « Organize the world’s information »
X Prize Foundation: « Bring about radical breakthroughs for the benefit of humanity »
Quirky: « Make invention accessible »
Singularity University: « Positively impact one billion people »

Uniquely Yours
Highly Aspirational
Neither narrow nor technology oriented
Aimed at Heart & Mind
Declared with sincerity & confidence
The best way to **harness** human talent is through full-time exclusive employment relationships where **people are paid for the amount of time** they spend at a common location. They should be organized in stable hierarchies where they are evaluated primarily through the judgment of their superiors, and what and how they do their jobs is described.

Michael Chui, partner at McKinsey Global Institute
« If you build Communities and you do things in public, you don’t have to find people, they find you. »

Chris Anderson, DIY Drones
An analysis by the American Psychological Association of seventeen studies on hiring practices found that a simple algorithm beat intuitive hiring practices by more than 25% in terms of successful hires. Neil Jacobstein, an expert in AI, notes that we use AI and algorithms to mitigate and compensate for many human biases.
LIFE EXPECTANCY THROUGH THE AGES
Early humans did not generally live long enough to develop heart disease, cancer or loss of mental function. A snapshot of how life expectancy has changed, and the big killers of each era:

**AVERAGE LIFE EXPECTANCY**

30 years

Neanderthals (30,000 years ago): Died of injuries caused by rock falls, hunting accidents and conflicts. Food scarcity led to malnutrition. These hunter-gatherer groups contracted diseases that spread from animals. Rabies, tuberculosis, brucellosis, yellow fever and encephalitis were widespread.

38

Neolithic (8500 BC to 3500 BC): Agriculture, irrigation and urbanization brought problems associated with settled populations, such as fecal contamination of water and diseases such as cholera, smallpox, typhoid, polio and influenza. Malaria and other diseases carried by mosquitoes and insects, which fed on domesticated animals, appeared.

48 Early Medieval

Medieval period (500 AD to 1500 AD): Life expectancy grew with urbanization, but famine caused by crop failures and bubonic plague were the big killers. The Black Death (1347-1351) wiped out 25 million people in Europe and 60 million in Asia, returning several times, culminating in the Great Plague of London (1664-1666). By 1500, life expectancy had dropped back to 38.

38 Late Medieval

Classical Greece and Rome (500 BC to 500 AD): Tuberculosis, typhoid fever, smallpox and scarlet fever spread among the denser urban populations. Malnutrition, gastroenteritis and violence were also big killers.

40

Victorian (1850s to 1900): Typhus, typhoid fever, rickets, diphtheria, tuberculosis, scarlet fever and cholera waged in crowded cities.

70 75

1900s: Better health care, sanitation and living conditions boosted life expectancy to 70 for men and 75 for women by 1950.

70 75

Canada; Men Women

82 85

Today: Cancer, heart disease and stroke are the biggest killers in the developed world. Our longer lifespan also comes with unprecedented loss of mental function and mobility problems.
Renting, sharing or leveraging assets – as opposed to owning.

- Allows scalable products
- Lowers marginal cost of supply
- Removes having to manage assets
- Increases agility

<table>
<thead>
<tr>
<th>Company</th>
<th>Market cap/valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb</td>
<td>$25.5 billion</td>
</tr>
<tr>
<td>Hilton</td>
<td>23.6</td>
</tr>
<tr>
<td>Marriott</td>
<td>18</td>
</tr>
<tr>
<td>Host</td>
<td>12.7</td>
</tr>
<tr>
<td>Accor</td>
<td>9</td>
</tr>
<tr>
<td>Wyndham</td>
<td>8.4</td>
</tr>
<tr>
<td>InterContinental</td>
<td>7.5</td>
</tr>
<tr>
<td>Hyatt</td>
<td>6.9</td>
</tr>
<tr>
<td>Starwood</td>
<td>5</td>
</tr>
<tr>
<td>Extended Stay</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Data: Yahoo Finance/CB Insights as of July 12, 2016
Engagement is a collaborative way of enabling collaborative human behaviour-social behaviour to come into play. The truth is this: connected individuals can now do what once large centralized organizations could.

- Why do people connect together?
- What kind of purpose?
- Why are they acting in common interest?
- What trusts them in you?

• The question for leaders is how do you enable, foster, organize, galvanize and act on that fundamental human capacity to contribute and work with others?
Interfaces are filtering and matching processes by which ExOs bridge from SCALE externalities to internal IDEAS. Control frameworks. They are algorithms and automated workflows that route output of SCALE externalities to the right people at the right time internally.

<table>
<thead>
<tr>
<th>Interface</th>
<th>Description</th>
<th>Interface usage</th>
<th>SCALE attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver selection</td>
<td>System to allow users to find and choose drivers</td>
<td>Algorithms matches best/closest driver to user location</td>
<td>Algorithm</td>
</tr>
<tr>
<td>Video translation subtitles</td>
<td>Manage translations created by volunteers</td>
<td>Integrated TED Talks translations</td>
<td>Community &amp; Crowd</td>
</tr>
<tr>
<td>Task availability</td>
<td>Gigwalk workers receive location based, simple tasks when available</td>
<td>Matches task demand with supply of Gigwalkers</td>
<td>Staff on demand</td>
</tr>
</tbody>
</table>
In the early 90s, Walmart revolutionized retailing by launching its own geostationary satellite and then tracking inventory and supply chain transfers in real time. Walmart was also a pioneer in using RFID to track pick up products out of shelves.

ExOs are adopting OKRs:
1. Where do I want to go? (Objectives)
2. How will I know I’m getting there? (Key Results to ensure progress is made)
• “A great brand or company that never stops unfolding”
  
  Zappos CEO Tony Hsieh

• “Success is a loosy teacher. It seduces smart people into thinking they can’t lose”
  
  Bill Gates

• P&G Heroic Failure award honors the employee or team with the biggest failure that delivered the greatest insight.
Valve Software a gaming company with 330 staffers but no classic management Structure, reporting lines, job desc, or regular meetings. The Cie hires talented, innovative self-starters, who decide which projects they wish to join. They are also encouraged to start new projects, so long as they fit the company’s MTP. Autonomy is a prerequisite for *permissionless innovation*.

NB: Holacracy
“Communication is the basis for civilization and will be a catalyst and platform in the future for more innovations in many industries”

Marc Andreessen

Why Important?:

– Faster conversations
– Faster decision cycles
– Faster learning
– Stabilizes team during rapid growth
Characteristics of an ExO Ecosystem

1. Information accelerates everything
2. Drive to demonetization
3. Disruption is the new norm
4. Beware the « Expert »
5. Death to the five-year-plan
6. Smaller beats bigger
7. Rent, don’t own
8. Trust beats control, and open beats closed
9. Everything is measurable
Le nouveau ne sort pas de l’ancien, mais apparaît à côté de l’ancien, lui fait concurrence jusqu’à le ruiner.

*Joseph Schumpeter* (1883-1950)