InsurTech Snapshot
Current state of affairs & foreseeable developments

October 2018
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What is the Fourth Industrial Revolution?
The 4IR is characterized by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres. These overlapping technologies will define our lives in the decades to come.

- **Genetics** revolution will allow us to reprogram our own biology.
- **Nanotechnology** will allow us to manipulate matter at the molecular and atomic scale.
- **AI** will allow us to create a greater than human non-biological intelligence.
Why should it matter?
Because it will change everything, not only the idea of what a human being is but also the very foundations upon our society is built on.
Technological development
Moore’s Law: the power of chips, bandwidth and computers doubles approximately every 18 months.

The human factor
Technological development feeds and enables various trends in society: Democratization, social connections, DIY, Decentralization.

Exponential technologies
- Biotech
- Neurotech
- Nanotech
- New energy & sustainability
- ICT & mobile technology
- Sensor
- 3D printing
- Artificial intelligence
- Robotics
- Drones

From linear to exponential growth trajectory
66 million people were forced to leave their homes.
23 million persons are refugees.
The importance of regulators and regulations
What's all about?
Homes and factories will start to change with the IoT...
...and so it will change (P&C) insurance industry
Smart cars are already changing...

...and so it will change (cars) insurance industry
And everything else as well of course!
The product is **moving from post-event forensics to pre-event prevention.**

In the future the product will include **less and less** of the loss compensation element and **more services** designed to avoid/mitigate losses.

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**Smart things are coming…**

**…and so it will change insurance industry**
IoT is an "Adjacent Frontier" mainly because of:

- Technological entry costs are no longer barriers
- Regulators are FAR BEHIND the curve on this matters (as in so many others...)
- Use of data is discovered once it was collected...
  - Some concerns should be raised...
A QUBIT can have one of two states: 0 or 1. A QUBIT can be represented by a real number $a + bi$, where $i$ is the imaginary unit. A QUBIT can be represented by a vector in a two-dimensional complex space. The state of a QUBIT can be described by the state vector $|\psi\rangle = a|0\rangle + b|1\rangle$, where $a$ and $b$ are complex numbers with $|a|^2 + |b|^2 = 1$.

Qubits are the building blocks of quantum computers. They can be physical objects such as the spin of an electron or the polarization of a photon. Quantum computers use qubits to perform operations that are not possible with classical computers. Qubits are also used in quantum cryptography, quantum communication, and quantum simulation.

Quantum entanglement is a phenomenon where two qubits become correlated in such a way that the state of one qubit depends on the state of the other qubit, even when they are separated by large distances. This phenomenon is the basis for quantum teleportation, which allows information to be transferred from one location to another without physically moving the physical system.

Quantum error correction is a technique used to protect quantum information from errors due to decoherence and other quantum noise. It involves encoding the quantum information in a larger system of qubits, such that the error can be detected and corrected without directly measuring the qubits. This allows quantum information to be stored and processed with high fidelity.

Quantum computing has the potential to revolutionize many fields, including cryptography, materials science, and natural language processing. However, it is still a relatively new field and there are many challenges to overcome before it can be used in practical applications.
Sistema de refrigeración único

Aleaciones de muy alta performance

Tiempos acelerados de producción

Una única pieza
¿Cómo funciona una bio-impresora 3D?

1. Se dejan reproducir, en un ambiente propicio, células madre o células tomadas del organismo de una persona. Estas células serán usadas para producir la "bio-tinta".

2. Esta "bio-tinta" se introduce en unos cartuchos en forma de jeringas con una agujas largas para la impresión.

3. La computadora guía a la bio-impresora para ir depositando un diseño de células en capas muy precisas; una capa sobre otra. Entre cada capa se coloca una substancia llamada "hidrogel", la cual se coloca a través de una jeringa especial y que sirve para "darle forma" a las células.

4. El tejido así "impreso", se deja crecer y madurar y se retira el "hidrogel".

4. El tejido así "impreso", se puede usar para investigación médica o como material para trasplantes.
Preventing diseases for $199

Personal Genome Service™
Get to know your DNA. All it takes is a little bit of spit.

Here’s what you do:
1. Order a kit from our online store.
2. Register your kit, spit into the tube, and send it to the lab.
3. Our CLIA-certified lab analyzes your DNA in 6-8 weeks.
4. Log in and start exploring your genome.

Carrier status
Find out if your children are at risk for inherited conditions, so you can plan for the health of your family.

Health risks
Understand your genetic health risks. Changes you can make, versus what you can’t.

Drug response
Arm your doctor with information on how you might respond to certain medications.

Health tools
Decompose your family’s health history, track inherited conditions, and share the knowledge.

Inherited traits
Explore your genetic traits for everything from looks to resilience to make informed decisions.

Scientific advances
Keep receiving updates on your DNA as discoveries are made, so your knowledge grows as you do.

Disease Risks (100)  
- Elevated Risks
- Decreased Risks

Carrier Status (24)  
- Hemochromatosis
- BRCA1 and BRCA2
- Familial Hypocholesterolemia

Trails (50)  
- Age at Menopause
- Height

Drug Response (10)  
- Statin tolerance
- Warfarin

See all 100+ risk reports.
We will start cheating death...

... so how it would affect (Life) insurance industry

- 3D Bio - Printing
- Use of AI in medicine
- Predictive genetic testing...

might lead to adverse selection through asymmetry of information.
¿Quién cree que Blockchain revolucionará a la industria?

¿Quién puede explicar qué es Blockchain?...
Last but not least...

... what about Blockchain?

**B3i launches working reinsurance blockchain prototype**

B3i, the Blockchain Insurance Industry Initiative, announces launch of market beta-testing of its reinsurance blockchain prototype.
Autonomous vehicles will entirely re shape the new economy to come...

What about if instead of insuring x billion cars now we will have to insure a few thousand of fleets...
Who will be impacted?
Think

United States employment, by type of work, m

Non-routine cognitive

Routine cognitive

Routine manual

Non-routine manual

Sources: US Population Survey; Federal Reserve
Bank of St. Louis

Economist.com
* Distribution based on 2010 job mix.

The incipient world of InsurTech...

The growth of insurtechs.

Insurance tech funding, $ million

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding, $ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>223</td>
</tr>
<tr>
<td>2014</td>
<td>740</td>
</tr>
<tr>
<td>2015</td>
<td>2,650</td>
</tr>
<tr>
<td>2016</td>
<td>1,690</td>
</tr>
</tbody>
</table>

Where insurtechs are focusing.

<table>
<thead>
<tr>
<th>Category</th>
<th>Product</th>
<th>Marketing</th>
<th>Distribution</th>
<th>Pricing</th>
<th>Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;C</td>
<td>8%</td>
<td>4%</td>
<td>17%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Health</td>
<td>5%</td>
<td>3%</td>
<td>11%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Life</td>
<td>3%</td>
<td>2%</td>
<td>9%</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: CB Insights
Top 10 predictions for 2018

1. **AI accelerates**: Continued innovation and adoption of AI as an underlying tech
2. **Regtech rising**: Increased investment in regtech around the world
3. **Building bridges**: Greater collaboration and partnering between large-scale providers
4. **Next gen digital lending**: The rise of online mortgage technology and platforms
5. **Beyond use cases**: Early success efforts in the initiation of blockchain production systems
6. **Open banking**: Open APIs pave the road for third party developers in Europe and globally
7. **New challenger banks**: Financial services incumbents building their own digital banks
8. **Insurtech innovation**: Accelerated investment into driving insurtech innovations and building hubs around the world
9. **Going full-stack**: Broadening of solution sets by mature fintech companies
10. **Big tech participation**: More partnering between fintech and technology giants
Top 10 Trends in Financial Services, 2018

JANUARY 2018

INSURANCE

- Data protection and privacy take center stage: Several factors, including ceaseless cyberthreats and Europe’s General Data Protection Regulation (GDPR), will force insurers to adopt a fresh data strategy.
- Unstructured data spreads in property and casualty (P&C) underwriting and claims: Consumers want quicker underwriting and claims decisions, which will compel carriers to turn to unstructured data.
- Technology becomes a greater part of loss-control strategies: High-severity losses are pushing carriers to think differently about how to limit those losses.
- Instant claims payouts become key differentiators in P&C: In an increasingly customer-centric environment, more carriers will strengthen policyholder engagement and relationships by using available technology to pay claims quickly.
- Life insurers step up customer-facing full-office digital transformations: Customer demand and the need to improve upon the full customer experience will force life insurance carriers to look beyond front-office digital solutions to solutions that will support the full policy life cycle.
- Accelerated life insurance underwriting gets personal: The need to create an individualized experience while providing immediate gratification, simplicity, convenience, and products that fit consumers’ needs is pushing carriers to shift to a true accelerated underwriting process, employing rules engines, scoring tools, advanced algorithms, and third-party data.
- Life insurers embrace automation: Reducing operational costs, improving scalability, and streamlining internal processes while plagued by legacy systems are some key reasons life insurance carriers are forced to implement RPA to support automation.
- Health plans emerge as a medical bill payment channel: Deepening provider and member relationships are the linchpin for more payers to implement medical bill payment collection technologies, paving the way for a new disruptive consumer collection model in healthcare.
- Health insurers revamp provider data management: Better provider data management is being driven by Centers for Medicare & Medicaid Services. But with potential financial penalties, health plans recognize this capability’s importance as their businesses become more consumer-focused.
Figure 1.8 Customer Willingness to Purchase Insurance from BigTech Firms (%), 2015, 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>2015</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>16.4%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Europe</td>
<td>9.2%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>6.8%</td>
<td>14.4%</td>
</tr>
<tr>
<td>APAC (excl. Japan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latin America</td>
<td>50.6%</td>
<td>49.4%</td>
</tr>
</tbody>
</table>

Source: Capgemini Financial Services Analysis, 2018; Capgemini Voice of the Customer Survey, 2018
We have to figure out how to avoid being displaced by technology... and instead, how we can get the most of it for everyone.
Is the insurance industry prepared?

Are regulators well prepared?

Are WE prepared?
To present in true widescreen, you’ll need a computer and, optionally, a projector or flat panel that can output widescreen resolutions.

Common computer widescreen resolutions are 1280 x 800 and 1440 x 900. (These are 16:10 aspect ratio, but will work well with 16:9 projectors and screens.)

Standard high definition televisions resolutions are 1280 x 720 and 1920 x 1080.

Use the Test Pattern on the next slide to verify your slide show settings.
Widescreen Test Pattern (16:9)

Aspect Ratio Test

(Should appear circular)