



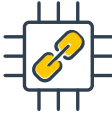







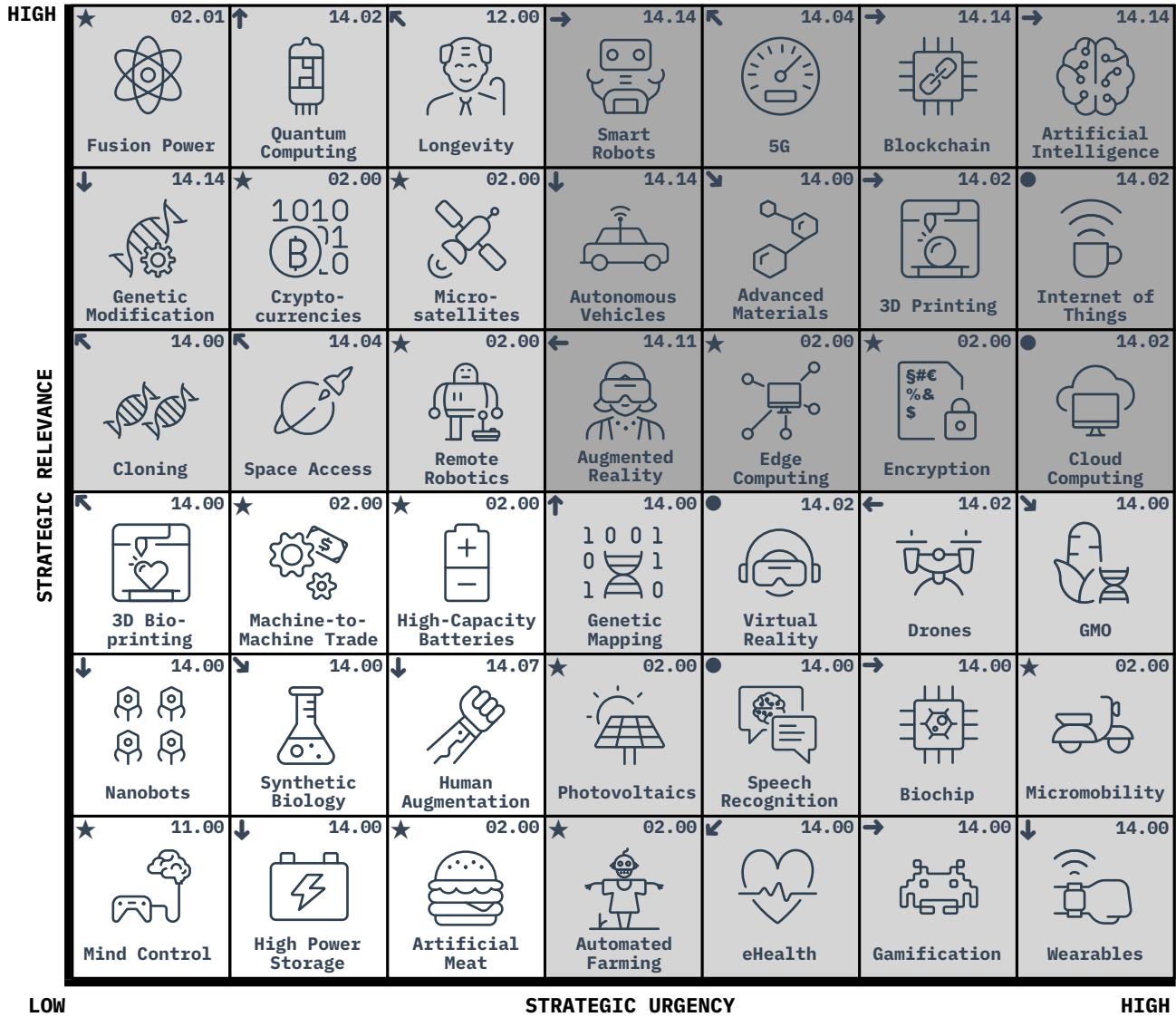
Below are the Top 10 technologies everyone is talking about right now. Remember to **ANALYZE** technologies, **ASSESS** the business implications and **ADAPT** to a new reality.

● 01	<h3>Artificial Intelligence</h3> <p><b>COMPUTERS WITH COGNITIVE CAPABILITIES</b>          ... consultants are using AI to scare incumbents. Short term hype, but long term transformational impact. No need to fear Skynet (as of now, that is)!</p>	
↑ 02	<h3>Genetic Engineering</h3> <p><b>CHANGE GENETIC TRAITS TO IMPROVE AN ORGANISM</b>          ... CRISPr on the rise, but there's different moral and legal frameworks around the world! Ethics is becoming a competitive advantage in research.</p>	
↓ 03	<h3>5G</h3> <p><b>NEXT GENERATION HIGH SPEED, LOW LATENCY MOBILE NETWORKS</b>          ... massive 5G advertising in airports but still very low end user interest. Telcos can't wait until AR and autonomous cars are becoming mainstream!</p>	
↓ 04	<h3>Augmented Reality</h3> <p><b>THE PHYSICAL WORLD THROUGH ENHANCED AUGMENTATION (YEAH!)</b>          ... recent releases from major players are actually not really living up to the hype. Any killer apps around the corner? When will Apple launch their device?</p>	
↓ 05	<h3>Blockchain</h3> <p><b>DISTRIBUTED DATABASE OF TRANSACTIONS, I E BITCOIN</b>          ... cryptocurrencies is feeling more and more like a cult. That said, interesting blockchain applications starts to appear.</p>	
↑ 06	<h3>Quantum Computing</h3> <p><b>INTRICATE COMPUTING IN THE QUANTUM REALM</b>          ... we've reached a state of quantum supremacy! Everyone's fired up, but still a long way to go until we have quantum laptops, smartphones or toasters.</p>	
↓ 07	<h3>Autonomous Vehicles</h3> <p><b>TRANSPORTATION REINVENTED, FLEXIBLE AND OFTEN AUTONOMOUS</b>          ... this is the holy strategic Grail for car companies, but no level 5 autonomy within reach. Automotive industry searching for future business models.</p>	
↑ 08	<h3>Smart Robots</h3> <p><b>INTELLIGENT ROBOTS WITH HUMAN CAPABILITIES</b>          ... some amazing concepts released lately. Still no general robotic use case but impressive niche applications in the works!</p>	
↓ 09	<h3>Human Enhancement</h3> <p><b>COGNITIVE AND PHYSICAL IMPROVEMENTS TO THE BODY</b>          ... temporary or permanent enhancement, all depending on the occasion. The end of disabilities? Robolympics anyone? Over-the-air memory upgrades?</p>	
↓ 10	<h3>Space Access</h3> <p><b>REUSABLE ROCKETS MAKES ORBITAL LAUNCHES MORE "AFFORDABLE"</b>          ... Space tourism, microsattelites and asteroid mining is revolutionizing the way we think about space! To infinity and beyond...</p>	

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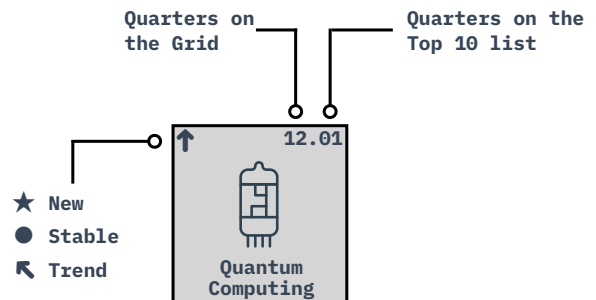
## Forecast spring 2020

The Techstorm™ 42 Forecast Grid, showing strategic relevance and urgency. Understand these perspectives and monitor movement to get the timing right!



STRATEGIC RELEVANCE	<b>PREPARE</b> When the technology is less established, but will potentially have major impact in the future. Be creative around potential applications.	<b>ACT</b> When a technology is imminent, and will have significant impact on your business environment. Analyze, assess and adapt!
	<b>REVIEW</b> When neither timing nor relevance makes the technology worthy of your attention. Come back for review at regular intervals, look for weak signals.	<b>MONITOR</b> When a technology is imminent, but today not necessarily relevant for your industry. Keep an eye on industries that have embraced the technology

STRATEGIC URGENCY



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## Forecast spring 2020

Behind the Techstorm™ 42 Forecast Grid is a set of 100+ technologies that are closely monitored and evaluated in real-time through a combination of data analytics and subjective reasoning.

### INSTRUMENTATION

Mind Control  
Mind Upload  
Genetic Mapping  
eHealth  
Wearables  
Biochip  
Hyperspectral Imaging  
Electron Microscopy  
Lidar and Radar  
GPS  
Biometrics

### ROBOTICS

Humanoid Robots  
Nanobots  
Robotised Services  
Haptic Robotics  
Human Augmentation  
Exoskeletons  
Swarm Intelligence  
Remote robotics

### TELECOMMUNICATION

IC transmissions  
LEDs  
Photonics  
Lasers  
5G  
Communication Microsatellites

### ARTIFICIAL INTELLIGENCE

Speech Recognition/Synthesis  
Machine Learning  
Deep Learning  
Neural Networks  
Pattern Recognition  
Factual Recognition  
Bots  
Real Time 3D-modelling  
3D scanning  
Deep Learning Material

### MATERIAL TECHNOLOGY

Frictionless Materials  
Light and Strong Materials  
Insulating Materials

Compounds 3D Printing  
Fibers Nanomaterials  
Nanomaterials Production  
Circular Economy  
Antibacterial Surfaces  
Structural Materials  
Artificial muscle  
Fresh Water  
Smart Materials  
Asteroid Mining

### COMPUTING ARCHITECTURE

Computer Memory 2.0  
Neural Computing  
Quantum Computing  
Nano-electronics  
Computing Power 2.0

### MOBILITY AND TRANSPORT

Autonomous Vehicles  
Micromobility  
Drones  
Light Aircrafts  
24/7 Aircrafts  
Radical Vessels  
Hyperloops  
Space Access

### PRODUCTION SYSTEMS

Things 3D Printing  
Construction 3D Printing  
Self-organizing  
Internet of Things  
Radical Production

### DIGITALIZATION OF SENSORY DATA

AR  
VR  
Holograms  
Virtual User Interfaces

### BIOTECH AND PHARMACOLOGY

Cyborgs  
Longevity  
Cloning  
GMO  
Genetic Modification

Synthetic Biology  
Precision Medicine  
Epigenetics  
Optogenetics  
3D Bioprinting  
Dementia Cure  
Artificial Meat  
Automated Farming  
Nanocellulose  
Cryogenics  
Neuroenhancers  
Nootropics

### ENERGY TECHNOLOGY

Photovoltaics  
Heat Capture  
High Power Storage  
High Capacity Batteries  
Artificial Photosynthesis  
Fuel Cells  
Hydrogen Storage  
Off Grid Solutions  
Carbon Capture  
Fusion Power  
Kinetic Energy Harvesting  
Ray Guns and Rail Guns  
Wireless Energy Transfer  
Vehicle Power Sources

### CROWDSOURCING PLATFORMS

Gamification  
Cryptocurrencies  
Crowdfunding/Microfinancing  
Flipped Learning  
Encryption  
Open Source  
Sharing Economy

### GLOBALIZING TECH INTERFACES

Modular Robotics  
M2M Trade  
Surveillance Microsatellites  
Cloud Computing  
Edge Computing  
Blockchain  
Tokens

Sources and further reading: [www.techcastglobal.com](http://www.techcastglobal.com), [www.wef.org](http://www.wef.org), [www.tulevaisuuspankki.fi](http://www.tulevaisuuspankki.fi), [www.ieee.org](http://www.ieee.org), [www.nasa.gov](http://www.nasa.gov), [www.wipo.int](http://www.wipo.int), [www.imperialtechforesight.com](http://www.imperialtechforesight.com), [www.matthiaskoller.me](http://www.matthiaskoller.me), [www.longnow.org](http://www.longnow.org), [www.futuretodayinstitute.com](http://www.futuretodayinstitute.com), [www.boardofinnovation.com](http://www.boardofinnovation.com), [www.iftf.org](http://www.iftf.org)