THE API ECONOMY OF WEB SERVICES

When developing a digital functionality, code as little as possible. Use 3rd party API web services. Today, the API, or Application Programming Interface, is the major way to connect software code and to build complete digital applications with a modular architecture.
European scaleups active in the domain: PieSync, Cronofy, Algolia, Neo Technology

BLOCKCHAIN

According to the Harvard Business Review, a blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way. For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks, which requires collusion of the network majority. It is the technology behind cryptocurrencies like the Bitcoin.
European scaleups active in the domain: BigchainDB, Wirex, Ledger, Bancor Foundation, SingularityNET

CYBER SECURITY

Cyber security is the protection of digital systems against unauthorized access, disclosure, modification, destruction or disruption posing threat to individuals, groups, society or a nation. Cyber security relies on deployment of dedicated system-wide processes and technology to attain certain level of security guarantees.
European scaleups active in the domain: Biowatch, Castle Intelligence

CHATBOTS

A chatbot is a computer program that attempts to simulate the conversation or "chatter" of a human being via text or voice interactions. A user can ask a chatbot a question or make a command, and the chatbot responds or performs the requested action. Chatbots can be thought of as the spokesperson for artificial intelligence. (Source: Techtarget.com)
Chatbots turn messaging into concierge services that simplify everything, from search over shopping to customer service. This sets the foundation for "conversational commerce". Watch the emerging impact of Amazon Alexa or Apple Siri in our lives.
European scaleups active in the domain: Babylon Health, Yelloan, Julie Desk, Cognigy

ARTIFICIAL INTELLIGENCE (AI)

Artificial Intelligence, or AI for short, is expected to support a new wave of automation. A system with AI is able to learn from experience, through self-learning algorithms and the processing of huge data sets. The term AI is often used in relation to a certain application domain, such as computer vision, natural-language processing, speech recognition, smart robotics, etc. (Source: McKinsey)
European scaleups active in the domain: AX-Semantics, Optimoroute, Luminance, Lexplore, PatSnap

VIRTUAL REALITY (VR)

Virtual reality is a computer technology that uses virtual reality headsets or multi-projected environments, sometimes in combination with physical environments or props, to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual or imaginary environment. A person using virtual reality equipment is able to "look around" the artificial world, and with high quality VR move around in it and interact with virtual features or items. The effect is commonly created by VR headsets consisting of a head-mounted display with a small screen in front of the eyes, but can also be created through specially designed rooms with multiple large screens. VR systems that include transmission of vibrations and other sensations to the user through a game controller or other devices are known as haptic or force feedback systems. (Source: Wikipedia)
European scaleups active in the domain: XMReality, Prowler, CGTrader

AUGMENTED REALITY (AR)

Augmented reality is the integration of digital information with the user's environment in real time. Unlike virtual reality, which creates a totally artificial environment, augmented reality uses the existing environment and overlays new information on top of it. Augmented reality apps are written in special 3D programs that allow the developer to tie animation or contextual digital information in the computer program to an augmented reality "marker" in the real world. (Source: Techtarget.com)
European scaleups active in the domain: Ultrahaptics, Crunchfish

INTERNET OF THINGS (IOT)

The Internet of Things is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network, without requiring human-to-human or human-to-computer interaction. (Source: Techtarget.com)
European scaleups active in the domain: SE.M.LABS, Sensorwake, Springworks, Famoco, Timeular

HUMAN AUGMENTATION & INTELLIGENT WEARABLES

Humans increasingly use technology to augment themselves i.e. to be omniscient, omnipotent, superhuman. Examples include the smart watch, smart goggles and implants. Researchers develop exoskeletons that reduce metabolic energy used when walking and carrying loads.
European scaleups active in the domain: Biowatch, Lofelt

GEOSPATIAL & LOCATION BASED

Geographical information and scanning technologies digitize the world and its physical structure, like buildings, infrastructure, landscape, etc. LIDAR is a key technology: it is a kind of 3D laser scanning with a pulsed laser light. Terrestrial applications are used for control and navigation of autonomous cars. Airborne LIDAR is applied by drones to map an area. Open Geo data are public data about infrastructure, environment and population.
European scaleups active in the domain: https://what-3words.com/, https://www.rockestate.be/

DRONES

A drone is an unmanned aircraft. Essentially, a drone is a flying robot. The aircrafts may be remotely controlled or they can fly autonomously through software-controlled flight plans in their embedded systems working in conjunction with onboard sensors and GPS. (Source: Techtarget.com)
European scaleups active in the domain: Lilium, AeroMobil

AUTONOMOUS VEHICLES

According to Gartner an autonomous vehicle is one that can drive itself from a starting point to a predetermined destination in "autopilot" mode using various in-vehicle technologies and sensors, including adaptive cruise control, active steering (steer by wire), anti-lock braking systems (brake by wire), GPS navigation technology, lasers and radar.. Intelligent transportation not only changes how people, goods, etc., get from point A to point B, but also how vehicles and technology talk to one another to create safer passage ways.
There are 6 levels of autonomy: Level Zero: No Automation; Level One: Driver Assistance; Level Two: Partial Automation; Level Three: Conditional Automation: in a level 3 vehicle, the car has certain modes that will fully take over the driving responsibilities, under certain conditions, but a driver is expected to retake control when the system asks for it; Level Four: High Automation: a level four vehicle can drive itself full time under the right circumstances, and if it encounters something it can't handle, it can ask for human assistance. This is the level Google/Waymo's test cars have been operating at for a number of years now; Level Five: Full Automation: steering wheel is optional.
(Source: https://newatlas.com/sae-autonomous-levels-definition-self-driving/49947/)
European scaleups active in the domain: Navya Tech, Daedalean, Starship Technologies, EasyMile

ROBOTS & COBOTS

The term Cobot emphasizes the collaboration between human and machine: robots as coworkers. Robots are leaving their industrial cages and entering our daily lives and homes. "There has to be the possibility of a productive back-and-forth interaction between man and machine the outcome of which is that the job will be done better than either the man alone or the machine alone would have done it – then I will be completely comfortable calling it a robot." Mel Siegel. http://serious-science.org/what-is-the-definition-of-a-robot-3587
European scaleups active in the domain: Moley Robotics, EcoRobotix , Stingray Marine Solutions, Exotec Solutions

ADDITIVE MANUFACTURING & 3D PRINTING

Additive manufacturing (AM) is an appropriate name to describe the technologies that build 3D objects by adding layer-upon-layer of material, whether the material is plastic, metal, concrete or human tissue. Common to AM technologies is the use of a computer, 3D modelling software, machine equipment and layering material. Once a CAD sketch is produced, the AM equipment reads in data from the CAD file and lays downs or adds successive layers of liquid, powder, sheet material or other, in a layer-upon-layer fashion to fabricate a 3D object.
European scaleups active in the domain: BeAM Machines, 3D Hubs, Cellink

DIGITAL SUBSCRIPTION MODEL

In a digital subscription model, a company makes money by offering a digital service for which customers pay on a recurring basis. As about half of the scaleups in Europe apply this model, it is one of the two dominant digital business models.

In a digital subscription model, also called "as a Service"or "SaaS" model, a service is offered online through the Internet or mobile devices. Customers pay for it regularly on a pay-as-you-go basis. The availability of mature cloud technology has made the model the most popular choice for digital ventures.

For end customers, this model has multiple benefits: they can enjoy the benefits of the software without having to worry about installing it or maintaining server infrastructure. Pay-as-you-go means that customers don't need to spend a lot of money upfront.

For providers, life is more difficult because not only do they need to develop a good software product, they are also in charge of all the operational aspects, i.e. service availability (24/7), the smooth running of the application, security, performance and so on. The loyalty of the user base is key for its success.

European scaleups with such a business model: Kayrros, Wizaplace, Upstream

DATA DRIVEN BUSINESS MODEL

Data-driven business means making money through collecting, aggregating, analysing and selling data. A few percent of scaleups in Europe apply this model.

A business can be made about data owned by the company, data purchased from other sources or freely available data (open data, web-crawled data) or combinations of those. Customers of data services are looking for insights about business intelligence on two levels. First, a data-driven segmentation or profiling (of customers, employees, devices, etc.) and second, a data-driven prediction of events or actions related to the segmentation or profiling above. These data-intensive models are hard to copy and their value grows over time by adding more data and gaining new insights.

European scaleups with such a business model: Boende.se, Foxintelligence

DIGITAL MARKETPLACE MODEL

A digital marketplace makes money by deploying an online platform that digitally enables matches between parties. As about half of the scaleups in Europe apply this model, it is one of the two dominant digital business models.

In the world of digital ventures, the digital marketplace is becoming an increasingly dominant business model. These are businesses that use the Internet as a channel to achieve a better match between a specific demand and an offer. To scale this, digital matching algorithms can be applied. You can initiate recommendation as a service: learn from successful past matches to improve future matches. This can result in a self-sustaining, continuously improving service that your competitors may find hard to copy.

European scaleups with such a business model: Lobster, Raisin, Demooz, Message In A Window

COMMUNITY BUILDING MODEL

This model builds value by the animation of a community which can be activated to influence, assist, advice or promote towards peers. A few percent of scaleups in Europe apply this model.

The critical challenge in this model is the activation of a community, at a critical mass and with a decent activity level. The business model is typically an indirect one, revenues are made mainly via advertising, donations or services to third parties.

European scaleups with such a business model: Tattoodo, Drivetribe, Jodel, Crowd-Justice, EatAndTheCity

The BUSINESS OF THE FUTURE CHEAT SHEET is an initiative by Sirris, Belgium.

sirris

driving industry by technology