Let's play
Gaming beyond games

Gamers. The image that came to mind until maybe 10 years ago to most of us when thinking of a gamer was that of a young man with vitamin D deficiency after spending too much time in his parents' basement. Some people still have this image today. They would be surprised to learn that the average gamer does not fit this description in 2018.

Based on a recent Pew Research Center survey of people in the US[1], we see that each new year makes it increasingly difficult to identify the "average" gamer. Young men until 29 years old still represent a proportionately larger share of gamers, but women in general and people up to 50 years old are also likely to present themselves as frequent gamers.

The stereotype is even turned upside down if we consider mobile gaming. An analysis from Google and Newzoo shows that 65% of women aged 10-65 in the US play mobile games[2]. Newzoo estimates the number of people playing videogames at around 2.3bn worldwide[3].

Your average gamer[4] ?

The gaming industry has evolved beyond anything the LAN-party goers of decades ago could have imagined. Its mechanics and technological progresses have also permeated numerous other industries, and this is what we want to discuss in this

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[1] PRC, 2017 : http://www.pewresearch.org/fact-tank/2017/09/11/younger-men-play-video-games-but-so-do-a-diverse-group-of-other-americans/ft_17-09-11_videogames_youngeramericans/
[2] Google & Newzoo, 2017 : http://services.google.com/fh/files/misc/changethegame_white_paper.pdf
[3] Newzoo, 2018 : https://newzoo.com/insights/articles/global-games-market-reaches-137-9-billion-in-2018-mobile-games-take-half/
[4] Photo by *rawpixel* on Unsplash

article. We want to show that the gaming scene in general should not be ignored and that closer to us, innovations made in Switzerland could make their way into different mainstream fields.

Let us start by visualising the everyday work environment. Many people are not 100% engaged at their desk, whereas the majority of players can easily spend an hour fully focused on their game, striving to reach their goals and get better. This simple observation is the why behind gamification. Gamification represents the application of techniques used in games – primarily to increase player involvement – in a business context. A question that naturally comes to mind is "what is it that makes people stick to games, then?"

We agree with Jane McGonigal[5] when she identifies the following four characteristics that define a game: a goal, rules, a feedback system, and voluntary participation. We'll focus on the feedback system: games provide immediate feedback and instant gratification when we see our actions succeed. If you manage to win a round of PlayerUnknown's Battlegrounds, you can ride the dopamine wave for a while, all this after a match that lasts around half an hour. You can get to the next level in Candy Crush during your morning commute. A round in Street Fighter can be over in less than 10 seconds. And every time this happens, you know immediately if you succeeded, what went right and what went wrong. You do not have to work on a project for 10 months, present it to a committee and wait another 1–2 years to see the results of its implementation. You do not have to study 3 years to pass the CFA and not really know what you did wrong on the exams. You can try, see the results and decide how to react on the fly.

We believe this keeps people engaged for long times and that the feedback system is the most powerful "brain trick" that can be applied to fields other than gaming. It is indeed used in companies to enhance employee engagement, improve training sessions or increase production volumes[6]. It is also used by app designers to make people spend more time on their platforms: dating apps like Tinder are known for gamifying their market via the system of swiping left or right that keeps unveiling new, random people like on a card game[7]. These are some mechanics that are inspired from the gaming world, but it does not stop there. Some technologies developed for the gaming world can be exported for other uses as well. Some examples:

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[5] McGonigal, 2011 : Reality Is Broken: Why Games Make Us Better and How They Can Change the World
[6] The Balance Careers, 2018 : https://www.thebalancecareers.com/gamification-hr-management-improvement-1917995; Zinger, 2014: http://www.davidzinger.com/wp-content/uploads/ASTD-Zinger-Gamification-Game-On-Article-.pdf
[7] Apptentive, 2015 : https://www.apptentive.com/blog/2015/02/13/what-tinder-can-teach-us-about-app-engagement/

Virtual and augmented reality technologies have been gamers' dreams for decades but are now being developed for education and training, first response and emergencies or drone racing[8].

Augmented reality for firefighters[9] and to teach about dinosaurs[10]

Another product developed for gaming but which has found its way into other fields is Microsoft's Kinect, a device that used a webcam lens to recognise user movements as inputs for video games on its Xbox console. It is being used to analyse if athletes perform movements the right way or need to correct something[11]. For those of you who might have read our article on machine learning and are interested in real life use cases, the Microsoft team that developed the software behind Kinect used a random forest classification algorithm to recognise user movements. The paper they published on their research is available online[12].

Gaming technology is also powering the race towards self-driving cars. Graphics processing units, also knows as GPUs or graphics cards, were first created to render the increasingly demanding images generated by video games for computer screens. Their capacity to perform many more computations in parallel than normal processors has made them very useful for machine learning, which is crucial for a self-driving car's capacity to react to its environment[13]. On a side note, this performance feature is also the reason why many cryptocurrency miners use GPUs.

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[8] The New Yorker, 2018 : https://www.newyorker.com/magazine/2018/02/05/the-trippy-high-speed-world-of-drone-racing

[9] Darix, 2018 : https://www.darix.ch/

[10] Teachthought, 2018 : https://www.teachthought.com/technology/32-augmented-reality-apps-for-the-classroom-from-edshelf/

[11] Swinguru, 2018 : https://www.swinguru.com/

[12] Shotton et al, 2011: https://www.microsoft.com/en-us/research/wp-content/uploads/2016/02/BodyPartRecognition.pdf

[13] R&D Mag, 2018 : https://www.rdmag.com/article/2018/07/using-deep-learning-ai-supercomputing-nvidia-works-make-fully-self-driving-cars-reality

A last general example, the Unreal gaming engine was originally developed for a videogame that was published in 1998[14], but with each new iteration its scope of potential applications and its user base have broadened. Today it is used by numerous companies in architecture, automotive or product design[15].

From Unreal (1998) to Unreal Studio (2018)[16]

Looking at the numbers is another way to realise that the gaming industry has become a behemoth: Tencent acquired Supercell, the creator of Clash of Clans, for USD 8.6bn, and a share of PUBG creator Bluehole at a valuation above 5bn. Microsoft acquired Mojang, the company behind Minecraft, for USD 2.5bn[17]. These numbers only represent the tip of the iceberg, with numerous deals every year reaching valuations of several hundreds of millions. The thing with gaming companies is that due to the inherent scalability of their business model, there can be extremely important jumps in valuation between a financing round and the next one. According to Crunchbase, Supercell did 3 rounds before its acquisition, raising 750k in 2010, 12m in 2011 and 130m in 2013[18]. This means that it does make sense to invest in potential stars at an early stage and to help steer them in the right direction, as it might become impossible to join the syndicate at a later date.

We believe the kind of potential illustrated above can also be found in Switzerland. With strong academic institutions that understand and mix art and science,

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[14] IGN, 2010 : http://www.ign.com/articles/2010/02/23/history-of-the-unreal-engine

[15] Epic, 2018 : https://www.unrealengine.com/en-US/studio

[16] Giant Bomb, 2018: https://www.giantbomb.com/unreal/3030-17646/; Unreal, 2018: https://www.unrealengine.com/en-US/studio

[17] Reuters, 2016: https://www.reuters.com/article/us-supercell-m-a-tencent-holdings/chinas-tencent-buys-clash-of-clans-maker-supercell-for-8-6-billion-idUSKCN0Z716E; WSJ, 2018: https://www.wsj.com/articles/tencent-nears-deal-for-10-of-pubg-maker-bluehole-1528889400; BBC, 2014: https://www.bbc.com/news/technology-29204518

[18] Crunchbase, 2018: https://www.crunchbase.com/organization/supercell#section-acquisition-details

festivals attracting people from all over the planet and games that catch the attention of international publishers, the local gaming scene is growing more interesting year by year, and some of its ideas and technologies find their way into other industries. The augmented reality headset for firefighters we displayed before is from a Swiss company called Darix. Another of the promising Swiss companies with a technology that is inspired by video games is called CtrlMovie. The concept is a bridge between cinema and a game, meaning that the audience watches a movie but can decide on the actions of the protagonists and see their consequences. They published the movie Late Shift in 2016, which used their technology and was very positively received, ultimately leading to an investment in 2018 by an important asset manager[19] and to the company's relocation to Los Angeles, closer to Hollywood.

Numerous Swiss studios have created games that have become hits, some of them even reaching the front page of the Steam store, the largest game distribution platform on the planet. We have been following the scene for several years, know the players and have seen their evolution, and are also members of a jury that advises ambitious gaming studios and reviews their business plans. All this gives us preferred access to growth-oriented companies and makes us confident in the scene's potential.

If there was still a preconceived idea that video games are a waste of time and brain energy and won't bring anything to society, then we hope our examples showed this idea has no ground. Additionally, we think the best is still to come and many people will be surprised by what the industry has to offer, and Swiss companies are in a good position to be at the forefront of its innovative power.

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[19] Late Shift, 2018: http://lateshift-movie.com/; Luzern Business, 2018 : https://www.luzern-business.ch/en/news/detail/?nid=11906