Universal Music Group and Musiio - operating in a digital era crowded with ”rabbits”

Universal Music Group’s and Mussio’s way of coping with Digital Transformation

Applying the Australian Rabbit-model

Universal Music Group is an innovative, over a century old, company and Musiio is a new and groundbreaking company - Interesting targets to analyze, let us dig deeper!
Introduction to companies and analysis

First up, is the well-known music leading record company Universal Music Group(UMG). In over a century, they have identified and developed artists and songwriters, produced, distributed, and promoted music. UMG is today present in more than 60 countries, owns and operates a broad range of recorded music, music publishing, merchandising, and audiovisual content. Their catalog of recordings and songs comprises the largest collection of music ever assembled [1]. In 2019, FastCompany rewarder UMG, in their annual ranking of most innovative businesses, as the world’s most innovative company [2]. UMG has been through it all, cassettes, CDs, downloads, streaming, etc., and still, they managed to stay alive. UMG is clearly an interesting company and lets us find out more.

Next up, is Musiio which is breaking new ground in the music tech industry by making music discoverable with the help of Artificial Intelligence(AI). Simply put, Musiio has an AI software that can ”listen” to music and with the help of this, large catalogs become radically more searchable and are through that filling a big gap in the music industry. Musiio tag, search and playlist large catalogue music with B2B solutions either through their APIs or customized solutions. [3] The founders of this Singapore-based company, are Hazel Savage and Aron Pettersson. Aron is, in fact, a previous KTH student and nowadays a professional in bringing business value through AI. I was fortunate to have the opportunity to interview Aron and I am excited to share the insights.

In essence, we have one company breaking ground with AI in the music industry and another company over a century old, but also innovative and for some admirable reason have been able to stay alive for this long time. With no need for further motivation, we may say that these are interesting targets for our digital transformation analysis. Let us dig deeper with the help of the Australian Rabbit-model.

But first, a short intro to the Australian Rabbit Model that will be used throughout the analysis. The key components: The Rabbit, Australia, and the arrow
The Australian Rabbit-model

The Australian Rabbit-model is using the metaphor of when rabbits arrived in Australia as a way to navigate the future in a digital area. The model is described in Henrik Blomberg’s book ”Stop! Nobody move!” and has three important components; the rabbit, Australia, and the arrow. Rabbits arrived in Australia and had no natural enemy at that time and therefore multiplied and spread quickly, shocking the whole ecosystem. Lots of actors tried to stop the spread of rabbits with but it simply did not work. After a while, when the process of change was over, a new ecosystem occurred [4].

This is similar to when digitalization arrives in a new market. The rabbit represents the digitalization, the country represents the industry, and the arrow is the theory/process behind the introduction of digital technologies. When digitalization is introduced to an industry, it does not have a natural ’enemy’, even though some actors try to stop it, it spreads quickly and messes up the balance in the industry. Eventually, after a period of disruption, it adapts and finds a new balance with a new industry structure [4].

This model can be used to effectively get a

direction of the future in terms of digital transformation and let us know what the gradual steps are to get there. One may analyze what the rabbit / digital technology is capable of doing, place it in the context of an industry, and then with the help of theory, create a picture/direction on where the industry is heading thanks to the rabbit and then analyze what gradual steps are needed to get to that stage.

For this paper, the rabbit will be digitalization, Australia/the country is the music industry, and with the help of theory and the rabbit-model, an analysis will be made on how these companies have developed into the role it has today or what it has done to take on the role that it seems to be striving for. The focus will be put on the past tense regarding how these companies have coped with ”the rabbit”.

Universal Music Group (UMG)

UMG could more or less control the music industry when physical CD distributions were dominating

UMG's role c. 20 years ago

Going back c. 20 years, the music industry almost solely relied on physical distributions of music, such as CDs. This period was right before, or the start off if you may, the advent of the internet and the explosion of digitally downloaded music. Back then, UMG could rely on traditional supply chain models where their music was distributed via CDs, people would buy them, and UMG could more or less make sure that they received payments for their records. Along with the other big five record labels, e.g Warner and Sony, UMG dominated the industry.

Downloads/piracy, streaming, and COVID are some key drivers / ”rabbits” in the change of the music industry landscape

Industry change due to 'the rabbits'/digitalization

Now comparing the situation c. 20 years ago to where the music industry is at today, one can see that industry has indeed gone through some digital transformation. The industry has witnessed a change going from purchasing music in a 'physical format', (CDs), to accessing music in a streaming format. Traditional business models and the way we experience music have been disrupted in various ways. Record labels used to make a good fraction of their revenues via distribution to physical audio media via brick-and-mortar where on-time purchases dominated, while today the distribution occurs via streaming services following new business models, e.g. earns based on the consumption of music instead of one-time purchases. The confrontation of digitalization in the industry has been pushed even further due to the COVID-pandemic the past year, with flipped consumer behaviors and various consequences, such as cancellation of physical live-concerts. The pandemic has forced our music consumption to adapt to the new normal, accelerating the digital transformation so that change that probably would have taken years have happened in a couple of months. To put it mildly, there is a lot to say regarding the change of the music industry due to digitalization, and for now, we will try to highlight some important 'rabbits' and their consequences.

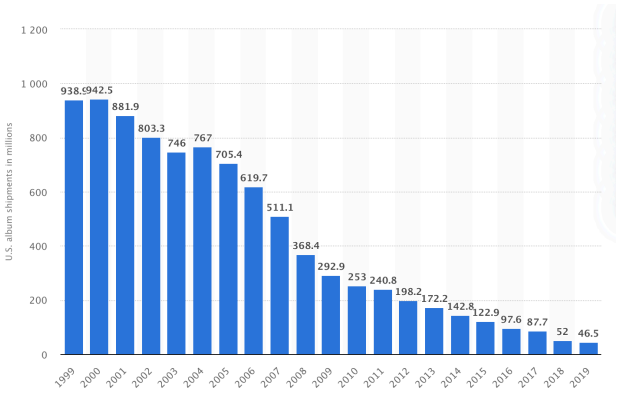

Figure 1: Physical CD shipments in the United States from 1999 to 2019 [5]

There are many enablers behind the music digitalization journey, but a key 'rabbit', or the main driver if you will, is the internet. The internet in combination with other digital technologies have rearranged the music eco-system forcing adaption and new balances to take place. Figure 1 showcases a clear trend, the sales of physical CDs have steadily decreased over the past 20 years. Now during this downward trend, what replaced the CDs, and what were the 'rabbits'?

Initially, 'downloads' rearranged the music industry, or piracy if you may. New data compression standards, such as the MP3 standard, and the rise of the internet opened up whole new opportunities for music consumers. Via peer-to-peer file-sharing networks, e.g. Napster, it was possible to download music in an MP3 format and listen to it directly on your computer or MP3 player. All of a sudden there was no need for a CD which of course shocked the industry. However, not only the format was shocking, but these music sharing software programs had further consequences where all the sudden enabled free music sharing. Consumers could listen to music without having to pay for the royalties in contrast to regular purchases where record labels would receive royalty-compensation. How this change was handled by UMG and record labels will be further discussed in the next section. To add to this discussion, a common phenomenon in this period was to burn CDs, which means to copy files to the disc, meaning that one could perform downloads and then burn it to a CD. Hence, the 'use of CDs' might not have decreased at the same pace as purchases shown in figure 1.

Further, in what other ways did these 'rabbit', downloads via the interest, change the industry? As seen, physical distribution became less important and the download phenomenon made it possible for completely new players to enter the industry, e.g. a non-commercial actor like Napster, messing up the traditional industry structure. Earlier perhaps more comfortable traditional supply chain models abruptly became challenged forcing new structures to occur. The rise of downloads changed the distribution of purchasable music to adapt and enable the purchase of music over the internet via downloads, e.g. iTunes.

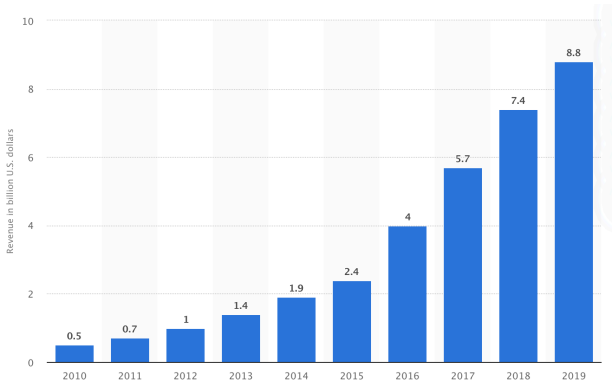

Figure 2: Revenue from music streaming in the United States from 2010 to 2019 [6]

Fast forwarding into the future, figure 2 displays another interesting shift in the industry namely the very strong, and even close to exponential, growth of streaming for the past ten years. "The rabbit" we are witnessing in this graph is streaming, again tightly connected to the internet. Digital technology advances such as better bandwidth have enabled on-demand services. The rise of streaming has caused, once again, a rearrangement of the music industry structure. This time it is the traditional "purchase" of music that has been disrupted by the subscription and advertising financed access to music via platforms. The rearrangement is hence a shift from purchasing in the traditional manner to accessing music.

Initially streaming relied heavily on computers, but as the use of smartphones have exploded in the last few years and their internet and data connection have been rapidly improved, music listening is now more steered from our phones. Perhaps the access-model is even more beneficial in this shift potentially explaining the close to exponential growth one can spot in figure 2 for the later years. Let us in the next section dig deeper into how record labels and especially UMG have coped with the spread of this "rabbit", i.e. streaming.

During 2020, we have seen yet another shift, namely the change towards the "new normal" as a response to the COVID-19 pandemic. Con-

sumer behaviors have radically changed to adhere to the distance economy to minimize the disposal of physical contact. The change has had multiple consequences for the music industry, for instance, physical live concerts are currently not possible, or feasible one can say. The physical interaction has been more or less removed and instead relies on platforms such as social media ones etc. Also, various more implication have followed by the ”new normal”, such as the industry now relying much more on the internet, some parts of the society is suffering from less disposable income due to the social change, and digital technologies such as AI have had the opportunity to spread as the market becoming more digitally mature [7].

While outperforming the market, UMG has fought piracy, manage to get a cake of the streaming shift, and today focuses on royalty ownership as new business models emerge, and also seems to be investing heavily in digital innovations

UMG's way of coping with these changes and its new role

Take a short moment and study figure 3, (the global record market revenue development), and figure 4, (the UMG revenue development):

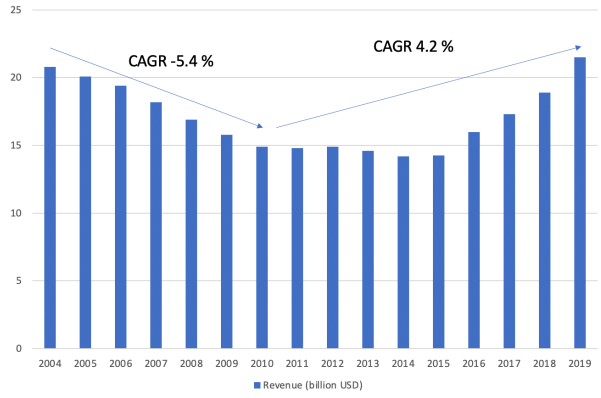

Figure 3: Global recorded music revenue from 2004 to 2019 [8]

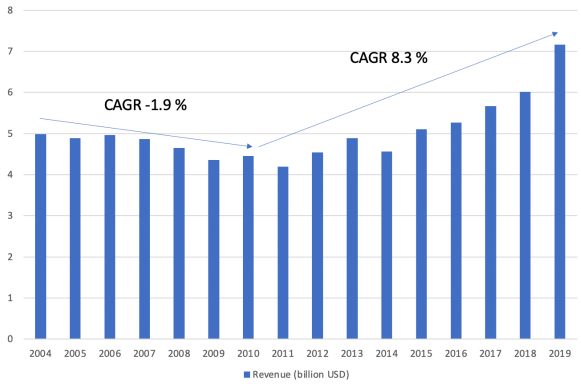

Figure 4: Universal Music Group's revenue from 2004 to 2019 [9]

There are a couple of interesting observations to make here:

- From 2004-'10' the market experience a negative 5.4 percentage of Compound Annual Growth Rate(CAGR), while UMG only declined by a negative 1.9 CAGR.
- Similarly from 2010-'19', the market only had a 4.2 percentage of CAGR growth, but UMG accomplished an 8.3 percentage of growth.
- Also, it looks like UMG had a quicker recovery from 2011 and onward than the market only recovering c. 4 years later.

The exact reason behind these interesting differences in revenue trends can be many, e.g. acquisitions made and similar, and would require some further diligence out of scope for this essay. However, we can most likely conclude that UMG seems to have coped with earlier mentioned ”rabbits” in a somewhat successful way as they have outperformed the market. Some insights might be that:

- Did not suffer as much as the market from the shift to downloads
- Especially, look to have been able to **somewhat embrace the change to music streaming** as they had a faster recovery, as pointed out, and also have had stronger growth in revenues for later years.

So how did UMG cope with these challenges? UMG is a large corporation and to cover everything would be out of scope for the essay, however, a couple of things is worth pinpointing as it says something about their strategies around these ”rabbits”.

First off, most likely in an effort to respond to the downloads/piracy shift, UMG together with Sony and EMI launched their own subscription-based service called PressPlay[10], however, many would probably say that it was no major success. What UMG also did was that they sued actors involved in the file-sharing of music contributing to copyright infringements [11]. All these technology shifts were happening very fast and the law regulations, probably just like today, had a hard time keeping the same pace. Whether the lawsuits were a successful move or not is hard to say, but there was for sure a movement from the consumer side wanting to make their voices heard. For instance, in Sweden, even a political party was initiated, 'Piratpartiet' meaning 'the piracy party', and they pushed free sharing over the internet [12]. In 2003, UMG made another effort to cope with the decrease of physical sales [13], and massively decreased the price of CDs but most likely the spread of ”the rabbit” was quite unstoppable...

In the early days of streaming, in some essence, one might argue that it looks like Universal had another strategy to cooperate with the innovations. They were fast to give license to Spotify and even retained shares in the streaming company [14]. However, to mention is also that UMG, in a joint venture with Sony and EMI, launched a streaming service, Vevo [15], but it did not receive the same popularity as Spotify.

As the development of streaming has continued for the last decade, I think there are a couple of interesting things to pinpoint:

- One is that, thanks to streaming, **the business model has shifted towards recurring revenues.** Earlier CDs would be purchased with a one-time payment model but now the model is based on the count of listening which is often increasing over time.
- **Universal seems to have grasped the megatrend of the recurring revenue model**, as they recently bought Bob Dylan's royalties for a cost of an estimated 300M dollars [16]. Universal are smart, likely they have made a cash flow analysis making sure that this large investment was worthwile.
- The acquisition of Bob Dylan's royalties says something about future business models, **music royalties seems to somewhat become a digital currency in the music industry**, and this Universal seem to be aware of. Owning the royalties means to gain revenues from streaming services but also social media etc., and with data, it should be possible to calculate the royalty value.

Now, what about UMG efforts in ”the new normal” in the COVID outbreak? Well, Universal has done multiple initiatives and potentially this shows that they deserve the reward of being ”the most innovative company”. They have been fast to provide tools and platforms that can help artists connect with their fans in these times. For instance, they provide Universal Music Artist, a platform that gives details on how an artist's music is being consumed and the development of the fan engagement. UMPG Window is another interesting one, a platform that provides an overview of real-time earnings across the world. Not being only related to the shifts due to COVID, but UMG has invested in highly technical reporting systems to track royalty data and proprietary reporting to make sure they defend and impact the industry paying for their royalties [17].

Fighting piracy was a losing game while joining the streaming movement was probably the best they could do, and being a pioneer in the megatrends of new business models and ”royalty as a digital currency” is likely to be a success factor
Insights on strategic choices

In previous sections, we have seen a lot of changes as ”the rabbits” have spread and Universal has made various moves in these changes. As seen, UMG has significantly outperformed the market so it is fair to say that they have done some things right but there are also some eventual mistakes to point out. To conclude our insights on this based on earlier observations, the following may be said:

- **Fighting the shift from CDs to digital music over the internet was a losing game** as this ”rabbit” did not have any natural enemy in the old traditional industry structure and would spread inevitable. UMG tried to fight the download/piracy trend by creating an own paidbased service and by putting lawsuits against the legal persons behind the freesharing software. Whether this was a mistake or not is left to be unsaid, however, UMG should have joined / surrender to the internet movement earlier and seen it as an opportunity to intake the desired role in the changing ecosystem.
- On the other hand, UMG seems to have learned from their mistake as they were quite early to join the streaming movement. **The fact that they early on gave royalties to Spotify and sealed equity shares in the innovative company can easily be argued for being a strategically smart move.** It could be that, UMG had learned from their experience with the download shift and wanted to work with the new streaming innovation instead of fighting it. It might not be fair to say that they have not fought against Spotify, but still, they have made sure to take part in the ”cake” and made legal agreements that would benefit them. From their point of view, it was very likely a smart choice as the streaming change has been growing and will reasonably to continue doing so.
- In the now being, it seems like **Universal has grasped a megatrend of the shift towards recurring revenue models and royalties becoming somewhat of a digital currency.** As streaming seems to be growing in popularity, these trends will likely grow stronger, indicating that the move of buying the royalties of Bob Dylan was probably a smart one and that we will likely see more of that in a near future. Trading with royalties is likely something Universal is in a good position to do and speaks for a bright future, however, I am sure that there are other ”rabbits” to take into consideration here.
- **UMG seems to have made a strategic investment in becoming digitally cutting edge in the music industry development.** If one would browse through the company website, one can see as already mentioned, that Universal is making an effort to stay innovative in the digital field. They have released some really interesting platforms that benefit the core of their business, i.e. developing and marketing artists. These platforms seem to be leveraging some severe data analytics and if successful can help them in strategically moving forward. Particularly in the times of the pandemic, where the entire world is becoming more digitally matured, these can be particularly important.

Musiio

With an AI tool that ”listens” to music Musiio addresses the volume-issue in the music search and discovery field
Value proposition

Musiio is addressing the volume-challenge in music search and discovery. Everyday 40k songs are being uploaded on Spotify [18] and 72 hours of content is being uploaded per minute to SoundCloud [19]. To manually go through the vast quantity of songs would be nearly impossible and this is where Musiio comes into play. Their Artificial Intelligence(AI) tool can listen to music and identify thousands of features, characteristics, and patterns from the songs which enables the tool to make accurate tags and also makes music infinitely more searchable, and can automatically create playlists.

The solution facilitates the user with a whole new way of ”listening” to music at scale and enables clients to keep up with the colossal volumes of songs and drastically augment their search and discovery of music. The products may be used by record labels or streaming services, businesses with large music catalogues, or simply just anyone tagging music or benefiting from a tool that can augment their decisions in selecting music.

Their current self-explanatory products are ”Tag”, ”Search”, ”Playlist” and ”Custom shop”(Custom AI training). Try their **search function** for yourself or perhaps their **tag service** as they provide a free demo on their company web page. Pretty entertaining I must say, especially the search function, you can enter your favorite song as a YouTube URL link and it will output characteristics along with similar songs that the AI tool have generated.

Music creation has become much more accessible due to digitalization causing ”information overflow” and AI is likely to boost this trend even further
Digitalization/”rabbits” and its impact

Musiio is a rather new company, however, the need for the AI solution they provide origins from digitalization. Before the rise of personal computers, tablets, and smartphones, the barriers to entry into the music industry was high as it required a studio to record your music. Nowadays, that is no longer the case, innovative software applications to our digital devices have significantly lowered the barriers to entry into the industry. Just like we saw in the case of Universal, also here ”the rabbit” has spread and rearranged the industry structure with a major shift that almost anyone can record music.

As earlier mentioned, 40k songs are uploaded to Spotify daily [18] and 72 hours of music per minute to SoundCloud [19]. These massive figures say something about the shift in the industry from a manageable pace of new songs to an enormous amount every day that would be nearly impossible to diligently go through in a manual manner. On top of this, the CEO of Mussio, Hazel Savage, argues that there is much more volume to unleash as the potential of music in countries like India and the Philippines is not fully processed [20]. Further, as ”selfrecording” become accessible to almost everyone, much material produced is lacking quality. One may argue that the music and song producing industry is a rather complex one, with ease of producing something that already exists and is not a legal use of audio, or simply something that will no go well with the market.

Hence a lot of music is processed and produced every day and it is getting more and more hard to ”cut through the noise” in the music search and discovery field. Possibly, this is where another ”rabbit” comes into play, that is Artificial Intelligence. It might scare a lot of people when they come across the words ”Artificial Intelligence” and ”Music” in the same sentence, however, what is issued in this specific context is AI to help and augment music search

and discovery. As outlined, there seems to be a need for automation and this is often where AI and Machine Learning(ML) come well into play. These technologies are often proved to be efficient when it replaces a repetitive function which the labeling, tagging, and searching of this vast quantity of songs look to be.

However the potential of AI, or the spread of ”the rabbit”, does not stop here. Some of my favorite use cases are jukebox by openAI and Magenta by Google. The jukebox innovation is a neural network that has been trained on 1.2 million songs to predict compressed audio tokens, and through that, it can generate automated music [21]. Google Magenta is a project to explore the potential of using machine learning in music creation. The deep learning and reinforcement algorithms have been trained to generate, for instance, songs. But they are also exploring tools that can be used by artists and songwriters to extend their processes in creating music [22]. Now when it comes to what the future holds, many would probably argue that AI will further augment and help producers and songwriters as it learns and continues to be integrated into the music sphere.

Me personally, I think it is important to view the AI technology as an extension to creating music and my thoughts are that it will not replace this creative process, but rather work alongside it to help creators be even more innovative and creative. As mentioned at the beginning of this section, digital technologies have lowered the barriers to create music, but the potential of integrating AI could probably make music composition even further accessible to every man.

Henrik is emphasizing something interesting as he presents ”The Australian rabbitmodel” in his book, namely that it has an underpinning assumption that as long as a digital technology brings value to us, humans, we will eventually adopt it [4]. I think this should be applied to when thinking about AI and music as well, as long as it improves our music experience, ”the rabbit” will likely spread. For instance, personalization with the help of AI is already spreading widely in the industry and is likely to continue doing so as one could easily argue that we humans love customized experiences as they are making us feel special. Also, what defines a good music experience varies a lot and therefore personalization could make sense in this manner and brings value to the listener.

Musiio want to augment the music search and discovery, and in the long term create more transparency within the industry and the entire music ecosystem

The role Musiio is striving for

In the conversation with Aron Pettersson, the CTO and cofounder of Musiio, he phrased it nicely to where Musiio is heading; ”We want to extract the most possible value from what technology has to offer us” [23]. Simply, Musiio wants to bring the most possible value for the industry that they are operating in based on the intersection of what the technology allows for and what the market finds valuable.

Moreover, as the industry landscape is changing due to ”information overflow” when it comes to the amount of music, there is a need to cut through the noise in these extreme volumes. If not a solution is given so that this music can be diligently processed many songs will be missed and nobody will listen to them. Aron mentioned a quite interesting innovation, ”Forgitify”, that randomly gives the user a song that nobody has listened to and further emphasized the importance of making music searchable in today’s ”explosion” of new songs [23].

To synthesize, Musiio wants to deliver a solution to the industry that enables sorting and detection of good music. Potential development opportunities are to improve the feature of detecting a good and successful song. If Musiio can tune their ML and AI algorithms to detect what factors make a song successful and what traits create listener stickiness, that would bring enormous value to the industry and the whole music ecosystem. If AI can help to detect great artists before anyone has discovered them, they can be brought to ”the scene” and would make the industry fairer. Not everybody is good at or have the capacity to perform good marketing so if algorithms can augment ”the sourcing” with

great predictions, that would be of great help.

Also, not to forget, is their recent innovation on their tool being able to predict ”the mood” of a song, e.g. whether it is a positive or melancholic song, and this innovation could have some positive future outlooks. The possibility of telling your music device to play as an example: ”Positive and classical music and preferably form the 1920s”, has some attractive use cases.

The journey to achieve the desired role has been a granular process both from the technical side but also for the customer validation point of view

Actions made to achieve the desired role

The steps made to achieve this role have been a granular process [23]. The team started by identifying what will be technically feasible, what kind of products this could turn into, identification of customer prospects, and what they would find valuable and be willing to buy. Next up, the technical team had to identify what volumes a system could handle and how one would go around building such a system. The first algorithm built took 30 minutes to run and today it runs in less than a second [23]. Petterson pinpoints that it was all done in gradient steps and finally the performance reached a level that would be usable for clients. A key enabler to improve performance was to leverage cloud solutions because this would enable them to handle much larger volumes and, on top of that, easier scale to clients in different regions.

Aron says in the interview that he has sensed some initial inertia at first when their solution was introduced due to its complexity and people have a hard time understanding the use of it and find it a bit scary. Some might feel threatened to lose their job due to the technique, while Petterson continues by recognizing that it is only aimed to make their work easier and more effective.

Further, from a market perspective, there seems to be some necessity to get the market to a certain level of ”digital maturity” before some use cases of AI will be feasible. For instance, Musiio early on realized in conversations with clients that automated tagging was the most valuable thing they could provide with their technology. At first, the team was also assuming that their targeted clients would have their audio files stored on the cloud ready to be integrated into their solution. Nevertheless, that was no the case, some clients did but far from many, and because of that a first step was to work as a ”consultant” to help clients store their audio files in an accessible format. Aron explained that the task of getting the audio files ready was an initial challenge and was threshold by enabling very customized solutions in the uploading of files with ”adaptors” to transfer different types of files.

Lastly, one can add that Musiio made an initial choice to base their company in Singapore. They were the first venture funded music-tech company in the region [20]. Even though potential drawbacks of not being situated in a region where the music ecosystem is well developed, this had some other advantages of, for instance, access to analytics talent. As most of us know talent within AI and analytics is rather scarce, and with Musiio being able to offer a unique exciting music tech company, they have been able to attract some great talent in the tech-heavy region [20] which of course is critical for their advance solution. However, Aron emphasized one of the greatest challenges have still been to plan for what talent is needed as the company has rapidly grown.

Customer validation and iteration, build intuitive solutions, leverage cutting edge technologies, and fill the gap of digital immaturity are some key components for the success of a company like Musiio

Insights on strategic choices

Based on these observations and further discussion with Aron, some insights on Musiio’s strategical moves may be drawn:

- Key wisdom is the importance to **talk to customers from day one.** The entrepreneur needs to personally face the clients’ everyday work and challenges. Aron emphasizes the struggle of trying to

predict the problem a client enocunter from the outside. Instead, it needs to be a hands-on practice so that exposure to real problems can occur. This was indeed something that Musiio did. Before writing any line of code they went out and talked to their prospects. This is how they got exposed to the earlier mentioned issue of not everyone storing their audio-files in a ready cloud-based format. Hence, it is important to not assume the status quo of clients' way of handling problems is the way oneself thinks, but instead personally face the problems. By doing so, one can early on be exposed to, for instance, the issue of audio file storage and adapt the solution accordingly.

- To further build on the previous hands-on process with the client, also having an **iterative strategy** has been a pearl of key wisdom for Musiio. They started by delivering a solution that was not perfect but could be iterated with clients. By delivering a minimal viable product, the feedback was received and they could make improvements in small steps. Improvements were also released in small steps and the team could ensure that not too much time was spent on invaluable tasks. Both form a market perspective and a technical one the choice of this strategy was a smart strategic move.

- **Planning talent is a rather complex task.** It is rather important to stop and evaluate where the company is heading so that one can plan for what talent that will be necessary and attract these.

- There are very few cut-offs when it comes to technical performance. However, a learning Aron emphasizes is that **one of the most important things a solution can bring to convince the client is an intuitive solution.** The client should be able to understand the product from just looking at it. If one can achieve this to a level where long and stiff demos are no longer needed to illustrate, it will be much easier to sell.

- However, one cut off that helped Musiio to reach what they are trying to achieve was the **use of cloud solutions**. This brought down the run-time drastically and could take their solution to a level that customers would find value in. Also, it will be a key enabler as they scale up to other regions. The strategy of using a cloud solution compared to traditional on-premise solutions could be viewed from the "Australian rabbit-model" where the new digital technology is the cloud-technology. Many would probably argue for cloud having no natural enemy in today's technology ecosystem, and as it enables a new level of scalability and performance, it has rearranged the industry structure for data storage. For Musiio to take on this development was most likely a smart move that will help them onward as the market will more adapt to this particular "rabbit".

- **Sometimes, it is necessary as a pioneer to help clients to build digital maturity to cross the gap to more advanced solutions.** Musiio early on discovered that many companies store their audio files in unstructured and traditional ways. The absolute first value they could bring to these clients was to help them store their audio files in a structured way by using automated tagging. One might think that meta-tagging audio files do not sound like the most "fun" solution, however, this is a necessary step before other features can come into play. Once the "data" is in a structure manner, it enables some more sophisticated ML and AI use cases. When the clients and the market in general have the structure in place, perhaps Musiio can get to the level where they both augment the sourcing of music but also creates a new level of transparency in the industry so that any great song can be discovered and enjoyed by every listener.

Potentially Musiio's technology is the next "rabbit" for UMG and, if so, they should embrace the solution

Finally, synergy effects between UMG and Musiio

To finish off, after seeing Universal adapting in an ever changing environment and Musiio pioneering the music search and discovery field, can we identify any commercial synergies between the two?

Universal Music Group could benefit from a solution like Musiio. It would be a way for them to handle their large catalog and a way for them to scout new talent and identify new potential collaborations. It could be that the new AI technology of sourcing talent is the next "rabbit" in the industry Universal is operating in. If so, and if they were to learn from their history and the insights built in this essay, they should not fight it but make sure to embrace and leverage the technology. Also, from Musiio's point of view, Universal would likely be a quite attractive option to include in their customer portfolio.

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