On the conquest of Metaverse

There is a clear race for computerized space, for the metaverse (or Metaverse), which is interconnected and has interoperability within a created world. Since the concept is so new and in its early stages, there are aspects acting first and making use of reduced information constraints. Lieberman and Montgomery's paper "First-Mover Advantages" examines mechanisms that provide advantages and disadvantages for first-mover firms. Altman, Nagle and Tushman put together paper "Innovating without Information Constraints", which considers how firms may change when information costs are cut. The papers provide lenses through which to look what is happening. One of the proponents for metaverse is Neal Stephenson, who actually coined the term and is now also developing towards the uninevitable new reality. Neil Stephenson discussed this sphere in the a16z's podcast episode "Neal Stephenson on The Future of the Metaverse" by Stephanie Smith. I apply the aspects of Metaverse and ideas of Lamina1, Stephenson's company aspiring towards Metaverse, and view how the discussed relates to the theories. The conquest of Metaverse to the top requires careful thought and strategy.

Lieberman and Montgomery in their paper "First-Mover Advantages" take a look into to advantages and disadvantages for first-movers. When it comes to advantages, three main sources are technological leadership, pre-emption of assets and buyer switching costs. Technological leadership means knowledge derived from experience as costs drop with cumulative output and patent protection (p. 42). Pre-emption of assets means acquiring scarce capital such as space, material, etc, so that competitors have it harder (p. 44). Buyer switching costs consist of need for late entrants to attract customers away from first-mover firm (p. 46). Disadvantages that first-movers shall be aware of are free-rider effects, resolution of

technological uncertainty and shifts in customer needs (p. 47). Elaborating more on free-rider effects, late-movers may benefit from early bird investments, R&D, buyer education and infrastructure, yielding lower imitation costs than innovation costs (p. 47). While first-mover opportunities appear endogenously through proficiency and luck, mechanisms on how to act are decided by the firm and its managers (p. 54), meaning it requires conscious decision on strategy.

Altman et al in their paper "Innovating without Information Constraints" categorize new strategical opportunities in innovation as information constraints drop. The biggest change that comes with larger storage, faster processing and better communication of information is shift from Chandlerian logic with hierarchy and control to Community logic with more openness (p. 20). This includes how organizations engage with labor, developers and users. Generally, this means labor marketplaces, developer ecosystems and user generation contributions (p. 49). In fact, strategic characteristics shift. Reduced information constraints allow vaguer organizational boundaries, more dependence on partners, leadership changes from within hierarchy to community, identity changes weighing on external communities, trickier intellectual property issues and easier search for problems and solutions (p. 51-53). In particular, leadership consists of managing externalities incorporating incentives for them and interdependence means developers joining the ecosystem and accessories are created outside (p. 52). Also, business model strategies may change as space is more open (p. 24). All in all, this creates larger innovation variation, better selection of promising ideas and stickier engagement by communities (p. 38).

When it comes to first-mover disadvantages, they shall be minimized by the first-mover. In order to decrease probability of success for late entrants, first-mover aspects around the

metaverse are rhetorical. In fact, Neil Stephenson in the podcast tells that "[his] colleague Tony Parisi has got seven rules of the metaverse and rule number one is that there's only the metaverse, there's not a bunch metaverses" (6:07), continuing with saying that "a central idea of the metaverse, at least in the book, is that there is just one of them" (6:43). Such rhetoric and action yields essentially no room for other metaverses, i.e. late entrants or any other competitors. As there can be only one metaverse and "creators … create experiences in the metaverse" (59:00), network-like effect yields that imitation costs are drastically increased as most value of metaverse comes from users and creators, creating impossible situation to mount for late entrants.

Considering first-mover advantages, the clearest utilization as such would be buyer switching costs. In fact, Neal Stephenson mentions that Lamina1 builds their own "base layer for the Open Metaverse" (54:56), meaning higher buyer switching costs due to finding costly to switch to another brand after time investment. They also try to retain such customers building quality software satisfying the need of customers. On top of that, "[they] are fans of making it easy and accessible without having to learn bunch of new stuff" (1:00:55), so that it would lessen switching costs from competitors and other late entrants. Of course, network effects also help with buyer switch costs because "nobody's going to go and use the metaverse unless there are experiences" (58:24). First-mover has huge advantage in terms of attention of people for which metaverse has to have experiences "lots of people enjoy having and are willing to pay for" (59:08) – it is upper-bounded, and thus scarce, asset for which firms are competing for. Finally, first-mover can learn from feedback loops, aligning with strategy of technological leadership. This all comes together as the power of first-mover opportunities, clearly seen already put in work.

There are strategies such as open leadership and clever intellectual property tricks that Lamina1 utilizes due to lower information costs. Leadership of Lamina1 sheds the brightest light how they conquer metaverse. They have adopted logic of persuasion in order to make their system attract for creators. They have focussed on secure transactions and intellectual property rights which all have means for less control and more open leadership by design (54:57). They also have thought about revenue incentives displayed through creating "a waterfall that basically just works through smart contracts and automatically distributes revenue stream among people who contributed to a particular project" (37:28) and thinking through "how content creators can get paid to build experiences [using their] layer one chain that works for them" (57:46). Regarding the intellectual property, we see that Lamina1's approach towards metaverse utilizes cleverly minimized information constraints. In particular, they implement clever blockchain system, which provides creators fair distribution of revenue (40:22), and they think of using "rating systems or third party evaluators" (43:33) for intellectual property rights.

On top of previously mentioned strategies, incorporated designs may contain importance of interdependence, unheard-of business model and transparent identity. Taking on importance of interdependence, aspect of partnerships with gaming engines (1:01:40) indicate dependence of others, also seen through Lamina1 working with Unreal gaming engine (1:02:07). When it comes to strategy of business model, Lamina1 is also looking into ways 'fighting free' as "the attraction of free stuff is powerful" (52:16) and yet having fair revenue model despite being "communications medium… trying to reach the broadest possible audience" (24:26). They also identify the need to appear especially flexible for users, i.e. engage with communities and allow mostly anything since they do not approach the metaverse "top-down, big boss that says here's how it's all going to work", rather as "ad hoc arrangements of people trying to work together" (7:54), which corresponds with identity alignments after diminished information constraints.

Identity tied together with community also shines through Lamina1's own description - "Lamina1 is base layer for the Open Metaverse [providing] community to support those who are building out the Metaverse" (54:54).

First-mover may be hit by devastating consequences, even when utilizing pioneering advantages. The most likely scenario is that there won't be universal metaverse, at least in near future with first-mover taking the crown. There will be metaverses which all can work as the metaverse, yet people and creators decide the dominant design. Also, as metaverse will not be done solely by one company, it will likely require development of structure bit by bit by multiple organizations and we see multiple standards around the space. While first-mover may get foot in the door, contributing and maybe even acquiring dominant market position, there will be others and there's no doubt about that. Still, it is important to note that there will be some who are leading the space, who have opportunities to establish dominant design standards as already mentioned. Consequences such as creators rendering useless experiences due to difficulty of the system or Veblenian rent-seekers, money laundering schemes and trust in technology are things Metaverse developers need to be aware of and these are not easy things to tackle. Yet, optimistic and open approach towards Metaverse is the right one and only future will tell whether first-movers are backed by success or not.

There are also other strategies which make use of smaller information constraints. As the metaverse space will want to be accessible for everyone there is need to be extremely transparent. That is why open source would make it extremely straight-forward, allowing users to contribute, fix bugs and on top of that, trust the platform with monetary transactions. This might somewhat conflict first-mover advantages at first, but as time progress, the value of open source increases. Also, while the ground is developed not fully taking into account community

due to myriad of conflicting visions and opinions, the experiences that will thrive on the Metaverse are fully built and decided by the external communities, making all variation, selection and retention better. When it comes to labor and developers, marketplaces for certain jobs can benefit Metaverse development and content. For example, this marketplace would connect people who want to improve or need help with experiences offered in the Metaverse. While there are obvious competitors on the field, it might also be reasonable to lessen organizations boundaries even more in order to collaborate more with others, whether these are opponents, vital partners or communities, because then it is easier to find required workforce and do more distant search.

The strategies which Metaverse builders utilize include first-mover superiority and innovating in a new way due to lack of information constraints. First-mover advantages are mostly applied through buyer switching costs as they build their own system and make it easy to learn in order to lower competitor firms' buyer switching costs. Also, there is rhetorical argument behind the scenes which establishes only one can succeed. Of course, network effects rise imitation costs up, rendering free-riders effect ineffective. Lessened information constraints allow firms to depend on communities, develop clever intellectual property considerations and of course have unique stance on business model, identity and leadership. Still, there are risks on being first-mover getting outperformed by better alternative or undermined by Veblenian rent-seekers or just distrust in particular Metaverse. Additional strategy utilizing smaller information constraints, which is worth considering, is open source taking the risks off from distrust and space gets more coherent since people can contribute. Circling back to people, marketplaces offer opportunity for both job-seekers and help-needers. Of course, better outcome also comes from the more collaboration and this can be done working together with others, whether these are opponents, vital partners or communities. Race for the Open Metaverse is happening and

winner-takes-all is in play – which strategies are being used and will become successful, only time will tell.

Reference list

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