

**The Aadhaar project as a guide for an alternative digital development in Quebec**

H. Delmaire

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# The Aadhaar project as a guide for an alternative digital development in Quebec

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Quebec and Canada at large face difficult challenges to adapt and compete in the upcoming data driven economy. Many analysts already consider the game to be decided in favor of the largest consumer data driven companies from China and the US: Tencent, Baidu, Alibaba... on one side; Amazon, Google, Facebook... on the other. They have the means, the reach and data access to strive in this new economy. You simply need to consider their R&D yearly budget (2017: Amazon 22.6 B\$; Facebook 7.8 B\$) to understand the challenges facing any competitors. Compounding this are the questions arising from the differences in employment costs, data gathering methods, confidentiality enforcement and data usage that would tend to tip the data science scale in favor of the Chinese groups.

It is worth noting that all the companies listed above work on variations of the same type of business model: developing a proprietary platform attracting consumers and then using the data generated by consumer interactions to develop and expand new business areas through the creation of specific Apps tackling these new markets. This is also true of most of their competitors, expectation is thus that an equilibrium will be reached with major market winners controlling some of the main Apps through their platforms and complementing each other in order to cover most of the competitive space.

Faced with that reality, the question for our provincial and federal government is simple: can they help foster an environment that will allow local companies to develop, create jobs and be competitive within that data driven economy? Both level of government participates actively in various initiatives aiming for that. They direct funds (in the hundreds of millions) toward fundamental, applied and collaborative research, as well as industrial projects (MILA, IVADO, Scale AI...). These are good and needed initiatives. They help create a strong pole of competencies that will support our position as a strong enabler of this new economy, but unfortunately, they will most probably fall short of getting us into a leadership position. The difference in investment means is too large and any emerging technology/application interesting enough will be snatched quickly by the giant groups.

Still, funding fundamental research is obviously needed, but one must understand that researchers need to publish to strive and that it is a very competitive and at the same time collaborative environment especially in data science and AI. Thus, publications come in fast and are available for all to see especially the teams from the giant players who have more data and resources to exploit them and no immediate obligations to publish their own results. In fact, these publications are a great resource for the HR departments of these companies.

Similarly, in the case of applied, collaborative research and even industrial projects that get supported by these funds, one has to ask himself about who gets that support. Most local SMEs do not have the resources, knowledge or awareness to get involved in these funding programs. Training programs aiming to bridge that gap are in the process of being implemented. In the meantime, however, the main beneficiaries remain large national or international groups opening local research facilities and getting a very generous level of financial support from our government.

Still, the ecosystem created is very positive as it works toward ramping up the competitiveness of the component of our economy that must compete within that data driven frame. The initial problem however remains: how can we hope to create that ever elusive Unicorn(s) that will be the cornerstone of our economy (and keep them here)? Is there a way to level or disrupt a playing field clearly stacked against players having relatively little data or economic clout? Finally, is there a way for a small economy or its citizens to keep a certain level of control on their personal data?

Last September I had the chance to host at [GERAD](#) a presentation by Pramod Varma the architect of the Aadhaar project in India. Also known as India stack, that project has seen to the creation of a digital identity for hundreds of millions of Indians that were lacking any form of it. With that identity comes the ability to open bank accounts, make cashless payments, get loans and sign documents. It has been a revolution especially for the poorer classes of the Indian population by giving them access to a range of services they were excluded from. That system is now hosting over a Billion users a little over 5 years after its launch. I think we can call that a success.

The India stack has its own structural logic and idiosyncrasies. However, the underlying principles can be seen as universal: simplicity as a credo, and a set of specific APIs managing transactions between users; this layer being controlled by a “neutral” agent acting as guarantor of the consistency and accuracy of the system. External agents can then create Apps using the given APIs with their own specific applications in mind.

This system is implemented through mobile phones and this has positive implications. First, with the ever-increasing penetration of biometric reading capabilities in Quebec/Canada the identity confirmation can be much more robust than on the Aadhaar system and allow for the development of non-traceable Apps in the sense that your name is (in general) not written on your face or fingerprints. This should greatly help acceptance and market penetration. Second, the cost of the system is basically limited to the software development and deployment. Finally, it creates an implicit strategic redundancy across the services provided (banking, payments, government services...)

It is conceptually simple, and it works, as demonstrated by the Aadhaar project. Success is helped by the government facilitating a first layer of basic Apps: identity, cashless payments and access to government services; but also, by ensuring the neutrality of the agent controlling the core set of transactional APIs. Of course, the system design must ensure minimal risks around potential security breach: user tracking, identity theft... but that is true of any system.

For a small economy (or a developing one) this structure has a wide range of potential benefits. It creates a natural barrier to entry into a market too small to attract the attention of the larger players, at least initially. As such, there should be a window of opportunity for local services / startup initiatives to develop and thrive. It also allows them to much better tailor their offerings to local needs and protect their culture and uniqueness. Simplicity in the definition of the system and the transactional APIs also ensure a measure of control over the dissemination of users’ data, tracking and exploitation.

The potential applications are numerous, they revolve around the need to have identity confirmation, signature, payment exchanges... These operations create the basis of an on-the-go economy. The simple use of this system as a payment getaway creates value as a substitute to credit cards if banks combine it with a credit line. Application ideas are numerous in a wide range of areas: smart mobility, bartering/sharing, voting or group decision making, government interactions, smart banking (e.g. opening/creating saving products for the general public not having to manage a relationship but simply interacting with a unique identity tag)... The fact that it is an open system should generate a strong competition and favor innovation.

There are obvious challenges involved in terms of development, scaling, implementation and operation. A major issue to solve is the cashless payment component: how do you get banks involved in order to maintain a link to real life accounts and still keep the transfer costs close to zero (an extension to Interac transfer agreements or something similar?).

Overall this is the kind of project the government and/or institutional investors should want to get involved with as it creates an alternative to the current paradigm dominated by American and Chinese groups. The famed Unicorn might not be created through it, however if implemented competently it will allow the generation of multiple smaller ones, and most of them will stay!