

STRATEGIC AND TACTICAL THINKING ABOUT DIGITAL INNOVATION

By George S. Takach

Everyone is being confronted by the requirement to address several interconnected digital challenges, namely what to do about: the Cloud, AI and the Internet of Everything? (I call this the Digital Trio). And as exciting as the Digital Trio is (I recall the Chinese proverb, "May you live in interesting times!"), it can also be quite overwhelming, or at least daunting. Let me illustrate the current challenges with an historic example.

We Have Seen this Movie Before

Let's pretend you were the manager of a delivery company in Vancouver, Calgary, Toronto or Montreal in the late 1800's. You had a fleet of horse drawn wagons, the dominant form of intra-city delivery in those days. For example, in New York City, there were 100,000 horses for such wagons in 1880. That presented some real problems. In NYC, each day (not year or month or week, but each day), some 5 million pounds (2,267,961 kilos) of horse dung was dropped on the streets of NYC, together with 60,000 gallons (227,124 litres) of horse urine. And streets were not cleaned that regularly back then. The resulting mess was atrocious, including the fetid stench. Something had to be done to replace the horse as a mode of urban transportation.

Enter the "horseless carriage". Clearly this was going to be wave of the future. So, as the manager of a transport company, wasn't this an easy peasy decision – just get on board with the new vehicles as soon as they appear? Unfortunately, when there is a major shift in an industry – a once in a century inflection point, a fundamental paradigm change – things can get very complicated rather than be straightforward. This was the case with the horseless carriage decision.

Two big decisions loomed. First, which specific horseless vehicle to acquire, and I don't mean by brand (but by the early 1900's there were over 500 manufacturers), but by technology type – because there were three of them. Some were powered by steam, not surprisingly because steam was the dominant form of industrial power in the factories, trains and ships of the day – this seemed like the most sensible choice. But wait, there was this new fangled energy platform gaining some traction, called electricity (and about 1/3 of new personal cars were electric). But still electricity was not a certain thing. Some cities had bought the system for street lights, but tier one manufacturers were still predominantly using steam to power their machines in their factories. And then there was an even more recent technology - an engine powered by gasoline, an oil derivative. But was it worth considering, given how new it was?

Well, we know how this movie ends, and of course gas wins big time (like today's network economy, the industry leader tends to take 85% of the market share – in personal and commercial vehicle transportation, gas has taken a much higher share than that – and there are many fewer manufacturer of cars today than 110 years ago). And it all seems so logical now; but that is only because we read history backwards, and when you do that, the line connecting dots seems very linear indeed. But in fact, while the strategic decision might be easier (i.e., have to get out of horse drawn carts), the many tactical decisions are not simple at all.

Today's Truck Mobility Decision

So, let's say you run a trucking fleet today. You have big 18 wheelers for long haul routes (i.e., between Toronto and Winnipeg), and then smaller trucks/vans for intra-city deliveries. And you know what the big, strategic problem is – the fossil fuels that power your fleet today are like the horses of 150 years ago – they emit an unacceptable amount of pollution. Moreover, the strategic answer is also fairly clear – you will have to switch to a cleaner form of fuel. The problem is – which of the competing technologies do you go with (because the decision is an expensive one, given the amount of re-tooling involved, at the level of each vehicle, but also the support facilities in each city). In not too long, there will be full on electric, but also hybrid electric, and then hydrogen as well.

Moreover, it will not be just a power train decision – there will also be a critical question of what degree of vehicle autonomy to aim for (i.e., the decision about a new truck technology implicates all three of the Digital Trio!)? Already today you are finding it very challenging to attract drivers for your long haul trucks. No one under the age of 35 likes the idea of living out of a cab in the back of the truck for five to 10 days at a time. And it will likely be the major intercity highways that go autonomous first given the ability of systems to master their fairly simple traffic dynamics (relative to the more complex urban environments). So, do you choose an all in full level 5 autonomy option, and therefore wait somewhat longer – or do you look at something like the Peloton truck platooning system, which reportedly affords significant gas savings just from allowing four of your trucks to speed along the highway as a “linked chain” (hence the name, like the bike racing peleton).

So, to recap – the strategic decision is fairly simple, namely that eventually you will have to move to your fleet to a new energy source. But the tactical decisions of which products and services to choose, and the all important “when”, that's where the challenges arise. To help with those decisions, consider the following tactical decision making tool, a framework for analysis, to help with your due diligence.

Important Lenses for Tactical Digital Decisions

Here are six lenses that can be useful for supporting the all important tactical decisions surrounding the adoption and use of digital and related resources; that is, how to deconstruct the big challenges posed by the Digital Trio. These decision lenses look at: technology innovation; business model innovation; social innovation; policy innovation; political innovation; and international innovation.

Technological Innovation. By this I mean understanding some key elements of the technology, and possibly even the science, of the product or service itself. Most critical is to get a sense of its maturity. Every technology goes through at least two waves – the initial euphoria of the invention stage, when the early pioneers plough into the field, and all sorts of versions and variations of it flourish, but typically only in the lab and possibly in a beta trial. But is it ready for prime time? That usually comes with the second wave, lead by one or a few aggregators who take the early work, and bring it to industrial strength. So, in your space, has the innovation progressed to this point. And I'm not saying that sometime it's not appropriate to be a guinea pig – a very early adopter – you just shouldn't be one unwittingly.

Business Model Innovation. As you do your due diligence, it is not enough to understand the tech you are being offered – you also need to get knowledgeable, and comfortable, with the business model being built around it. For example, your next truck fleet technology comes

complete with a big data service that tracks your trucks, but thousands of others as well, and then feeds you a steady stream of intelligence about your fleet, but also about the trucking space more broadly, data that you can deploy to manage your own company better. If this AI-driven service is valuable to you, or will likely become more so as time goes on and you have more experience with its data sets and analytics, then you need to understand who will be making what money from the service. This is critical so that you understand, fully, where you fit into the value chain. And if you have concerns, this is when you need to surface them. For example, you'll want to be sure that the supplier of the service, by collecting your own data, is unable to give away important facts about your company, such as how busy your trucks are at any one time, etc.

Social Innovation. Increasingly, it is useful to consider not only the business model for the new technology, but also to probe the social implications of the new development. What impact will it have on your staff, and of course your customers, and those in your supply chain, and others. You might be in an industry or in a type of activity where some “social license” might be useful to consider. This will not apply to everyone, but where it does it can be real and meaningful, and you ignore it at your peril.

Policy Innovation. A related point is that beyond what might be an amorphous “social license”, there may well be also a “legal license” that is implicated by the new product or process. Is it governed by some form of regulation? For example, what are the relevant trucking regulations, and how does the new technology fit into them. And what about the tax collector – does the new product or process implicate in any way what happens to the public tithe that may be due from the new activity – again, you cannot leave these sorts of questions to chance.

Political Innovation. Particularly if you do not like the answers coming from your review of the social or policy innovation review, you might consider trying to change the rules themselves through the political process, whether at the municipal, provincial or federal level. And you might be best advised to try to effect change through a trade association, where you can aggregate like-minded players in your industry to effect amendments to the legal or fiscal environment collectively. This also helps you be less conspicuous if there is a vigorous debate about the changes being proposed.

International Innovation. The final lens involves the world beyond our own borders, particularly in the United States and the European Union – how is the new technology being rolled out in those jurisdictions, and what are they doing with the same social, policy and political issues. Even if your trucking operations are limited to Canada, you will want to understand global trends, because there is such a buffeting of Canadian experience from factors that originate from beyond our borders.

To summarize, you cannot afford to ignore the new technological trends coursing through the economy, and society at large, just because the Digital Trio present some daunting challenges. Rather, you must frankly admit that some very tough strategic and tactical decisions await you. But neither can you be capricious about how you approach these decisions. A disciplined approach to evaluating your long term strategic options, and your mid term tactical alternatives, is most likely to lead to optimal decisions in the new hyper-charged digital environment. Next time, some of the micro legal and commercial techniques for helping with the inevitable risks posed by the Digital Trio.