

A turning of the technology tide?

Summary

Recent conferences show signs of a healthy shift from technology hype to pragmatic solution focus. Blockchain hype is giving way to practical implementation. Terminator style AI is giving way to more modest but still world changing machine learning (ML). Fast payments and open banking are spawning bank connectivity APIs but standards are conspicuously missing.

History lessons

Recent conferences have provided plenty to think about. I noticed that several prognosticators referenced long term historical patterns in their presentations.

Emmanuel Daniel cited David Ronstadt's "[Tribes, Institutions, Markets, Networks: A Framework About Societal Evolution](#)" which posits four phases – tribes, hierarchies, markets, and networks, which neatly correlate to village, country, region, and global. The key risks for each also give pause – nepotism, corruption, exploitation, and deception.

Stephane Garelli pointed out that technological revolutions have been happening all along (agriculture, writing, printing, steam over 10,000 years) but that change is accelerating (PC, internet, mobile, AI over 30 years). How management responds to change is critical – in the past 60 years average tenure in the S&P500 has dropped from 61 years to 18 years and at current rates we can expect 75% of the current S&P500 to have disappeared within a decade.

The World Economic Forum have their own take on historical change, where they talk about the [fourth industrial revolution](#). The WEF phases are steam, electricity, digital, and convergence (through machine learning and ubiquitous connectivity). In line with

statements like “data is the new oil”, many see this convergence as a major inflection point.

Chris Skinner’s phases are becoming human, becoming civilised (and creating money), becoming commercial (and creating banks), and becoming digital – hence his latest book title “[Digital Human](#)”. Before we are all augmented with silicon, our evolution towards “augmented intelligence” will progress from currently relying on Google as a clunky memory prosthetic to ever greater dependence on and integration with digital technology.

DARPA is working on [machine brain interfaces](#) – initially to help injured soldiers with prosthetic limbs but recently to control multiple aircraft at once (ironic in a world of increasing auto-pilot competence). So our cyborg days may not be so far away – “[You will be assimilated; resistance is futile](#)”!

Change takes longer than expected but is often more profound than expected. Especially we tend to ignore the social implications while focussing on technological changes.

Blockbuster

Garelli cited Peter Drucker who warned that technology should be an enabler not an end in itself. (The end, per Drucker: “The purpose of business is to create and keep a customer.”) Recently it seems that there has been a hunt for buzzwords in treasury technology – people want to have blockchains and big data and AI on their checklists. This despite the evidence that most treasuries have not yet implemented basic functionality like straight through processing and dashboards, and many still use Excel for day to day processing.

From this perspective, it is good to see that conference talk is turning from technologies and towards solutions. To paraphrase Deng Xiao Ping, it does not matter if the solution is blockchain or SQL so long as it works.

Taking the example of KYC, there are interesting solutions based on blockchains but they are more or less experimental. There are plenty of existing solutions using SQL databases available. The real issues are regulatory (getting the regulators to approve a given solution) and social (getting multiple parties on board). While many treasurers are waiting for blockchain solutions to go mainstream, some treasurers are reaping the benefits of current solutions by insisting that their banks go digital for KYC.

An analogous point came from a cyber security discussion at SIBOS – most of the conversation was about social engineering (tricking humans) rather than technology. There was a strong consensus that human and social factors are most important – there is little or no cooperation between countries and generally security technology is adequate but not used properly by humans.

Fast payments

With PSD2 going live in March 2019, there is a lot of buzz around fast payments – somewhat ironically since some countries have had fast payments for decades.

The use case for fast in retail is clear – it provides a faster, cheaper, and more efficient alternative to cards. For business to business, it is less clear. This is partly because, since many fast payment systems have deferred settlement, they often have transaction limits. For example, Singapore FAST recently increased to SGD 50,000, after MAS determined from the first few years of operation that bank liquidity management was robust enough to handle larger transactions. (Payments over \$50,000 will go through RTGS, which is also very fast but costs more.)

APIs

For use in e-commerce and retail, fast payments need fast processing. Although file upload (of instructions) and download (of statements) can be done quite quickly, APIs are a better way to

communicate fast payments and status. APIs process atomic transactions and are better suited to real time status messaging which is required for example for e-commerce sites to provide feedback to customers on the progress in clearing payment.

This together with regulatory pressure for open banking, is driving intense interest in APIs. Just to be clear, APIs are not new – every program (what we now call “app”) uses API calls to the operating system to draw windows and buttons, access data, etc. APIs are not even new in banking – credit card processing runs through APIs for example. APIs are the glue that hold systems together – for example e-banking front ends use APIs to communicate with core banking systems to fetch and post user data.

What is new is that regulators are pushing banks to open their systems to third party service providers. For example, a fintech or ERP could replace the bank provided e-banking front end with something better or more convenient for the user. Another attractive use case is for a personal finance site to be able to aggregate users balances across multiple banks – something like SWIFT bank connectivity for retail. (In fact these use cases could be done with file transfer but APIs add the real time element.)

If all this sounds too good to be true, it may well be. One major issue is that banking APIs are not standardised. When we do file transfer with banks over SWIFT we use either 50 year old FIN messages or 20 year old ISO20022 messages both of which are standardised. In fact, the ISO20022 are working on applying their standards to APIs via [JSON](#) and ISO20022 is standardising the additional messaging required for near real time fast payments, but we also need banks to agree to standardise their APIs on ISO20022. Currently the banks who have opened APIs have all invented their own wheels, making a mess for customers and service providers and a [boom in API management](#).

AI

It's official – AI no longer means artificial intelligence – hence forth AI means augmented intelligence (humans doing better with help from machines). Wiser heads prefer to talk about machine learning. Machine learning will do the boring stuff while we humans do the fun stuff – like dealing with other humans.

As the technology that was previous known as AI trickles into the real world, we see that it is more about pattern matching than the magic we had imagined to be AI. And to get the most out of pattern matching, we need lots of clean and structured data – so treasurers who want to get on this bandwagon have to ditch Excel and implement a proper TMS. With decent data, treasurers can progress from data analytics (what used to be called reporting) through statistical analysis and on to machine learning.

Beyond statistical analysis, ML uses a variety of algorithms to find significant pattern across large data sets. You can find an excellent explanation [here](#).

Moving terminology from AI to ML does not diminish the changes that are coming. Yuval Noah Harari gives a great [example](#) in terms of macroeconomics: currently perhaps 1% of the population understands the economy; in twenty years when most of the economy will be run by algorithms no one will understand it; decision makers will be given policy directions by machines that cannot explain their rationale because humans do not have sufficient bandwidth to understand. The machines will not be conscious nor intelligent in the way Hollywood expects; they will not take over in the sense of pursuing their own agenda because they will have no sense of self; they will take over in the sense of making most tactical decisions because they will be much better and infinitely more consistent than human decision makers.

Of course there are many issues with all this and as Harari points out managing the advent of ubiquitous ML is one of the three big

challenges facing humanity. A critical challenge is biases that ML may pick up from their coding and their training data sets.

If this seems far-fetched, consider the stock market “flash crash” phenomena. These are caused by algorithmic trading that we do not properly understand. We suspect it has something to do with stop loss and technical chart levels, but we do not have enough understanding to be confident of being able to manage it. So we have slowed down trading and tightened daily trading ranges to mitigate the risk.

Conclusion

Overall it seems healthy that the discourse on technology is shifting from hype to more moderate terminology and more modest expectations. Most important is the shift from technology to solutions. There really are better ways than Excel!

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