

Learning the art of implementing analytics

The perils of not implementing analytics well overshadow its promises. **BY REUBEN NG**

ANALYTICS is a scientific and data-driven approach to help organisations solve problems, make better decisions and increase productivity. Despite its business origins, analytics has been applied in governments, hospitals, public policy and even museums, spurring the growth of a US\$125 billion market.

A significant number of analytics projects fail, however, due to poor science (techniques), art (for example communication, implementation, change management) or both. I draw from my experience in consulting, government and academia to share learning points for organisations and governments embarking on their analytics journey.

Successful analytics involves both science and art

Organisations sometimes spend an inordinate amount of time on the science of getting algorithms right, and much less on implementation and changing mindsets. The perils of not implementing well overshadow the promises of analytics, as illustrated in the following case studies:

In the first case study, we achieved a US\$250,000 per month saving with a model to optimise the buy-store-distribute process. Scientifically, it was phenomenally successful, yet our solutions were not adopted. This was because the project manager was so worried about being punished for retrospectively losing the organisation US\$250,000 per month for the past 24 months on the job! I was astounded at how a tight culture could turn a successful solution into an opportunity for reprimand.

Confronting the sobering reality that we got the science right but neglected the art, I immediately convinced the CEO with my point of view. What ensued was remarkable: The fearful project manager was promoted two levels up to junior director, every other manager started to initiate analytics projects and, thereafter, analytics blossomed in that organisation.

In the second case study, my team was engaged by an Asian government client to design more proactive human resource (HR) practices. Current practices are reactive: When an employee leaves, it takes months to find a replacement, increasing the load of remaining staff. This client wanted to distil the drivers of attrition to achieve both macro and micro insights. At the macro level, that meant adjusting HR policies to decrease attrition; on a micro-level, predicting who may leave the organisation and intervening with those they want to keep.

Although large multinationals such as Walmart, Credit Suisse and eBay have attempted these models, this was the first-known initiative for a government in Asia. As expected, the science was tedious but straightforward but the art of change was more complex since we had to work through tough implementation questions: If an employee had a 40 per cent chance of leaving, and it took US\$50,000 to keep him, can the immediate supervisor make the decision and, if not, to which level should it be escalated?

Both case studies underscore the importance of paying attention to the art of analytics by asking, "how will the insights/models be used" and "how will processes change with this new capability"? Science distils the insights, art transforms them into strategy and implementation.

Integrated-methods approach is better than analytics-only approach

When analytics is top-of-mind, and investments – in the form of software and a new team – have been made, the bias towards analytics is inevitable, though it significantly narrows the pool of



Successful analytics in any organisation depends on several ingredients, which together nourish a strong data-driven and evidence-based culture for data analytics to thrive.
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solutions. Instead, organisations should focus on understanding the problem deeply and coming up with the best combination of tools, which may or may not include analytics.

In a third case study, a mega hospital was confronted with an increased incidence of falls resulting in serious injury. From a design-thinking approach, one would track the patient journey, find out the pain points and brainstorm solutions. An analytics approach would link disparate datasets and analyse for risk factors to predict fall risk of new patients.

Integrating design thinking (DT), analytics and behavioural insights (BI) along the solution value chain leverages the strength of each method to produce a better solution. Analytics can begin with patient segmentation: Among 2,000 patients, how many unique behavioural clusters emerge?

Behavioural segmentation, informed by analytics, provides the unique types of patients that DT can track through patient journeys. Thereafter, hypotheses can be quantitatively tested through analytics, revealing a list of risk factors for patient falls. BI picks up the baton to pilot test interventions and roll out the most successful programme.

Similarly, in projects across domains, this trio of techniques presents different ways to acquire evidence, which will not be robust if only one method is used. Analytics, no matter how powerful, should be used with other techniques to build the best solution.

Structuring the team for innovation

Given the benefits of incorporating different techniques, the next important questions are how to build a multi-disciplinary team and how to decide who will manage them? Typically, analytics, BI and DT are in separate teams, with analytics reporting to the chief information officer, and BI and DT, if existent, to the chief marketing officer.

I recommend bringing all into one team that reports to the chief operating officer or the chief executive officer. In doing so, the team is given the central mandate to tackle strategic whole-of-organisation challenges. Problems can be analysed from different perspectives with designers co-innovating with data scientists to craft creative solutions.

Singapore's Health Promotion Board is one of the few organisations I know that successfully integrated the analytics-BI-DT talent trio into an innovation team. When the team is centralised, rather than fragmented across the organisation, they deepen their skills by working on problems across domains.

In reality, not many organisations have the luxury of an analytics team. In Singapore, a good number of government agencies leverage a central pool of talented software developers and outstanding data scientists at GovTech, the government's digital talent hub.

There are projects where the data scientist dedicates a few months to work with an agency to gain deeper domain knowledge; on the other hand, a policy analyst may spend an extended period at GovTech to pick up computational thinking and coding skills. Such "exchange programmes" bring the analytics closer to the application.

Empowering whole-of-government analytics

Of broader significance, governments worldwide are adopting a whole-of-government approach to programmes and policies. For example, ageing is not only a health issue, it is also a transportation, environmental, social and family issue. Hence, the rallying cry is to break down silos.

I prefer a more conservative approach. Having worked on a farm, I'm reminded of silos containing grains, cement and sawdust. I can't imagine the mess if they are broken! Instead of perceiving silos as negative, consider them to be cylinders of excellence, with the need to build bridges between them.

To create even more opportunities for collaboration, the government organises forums for top leaders within different sectors to discuss and craft policies. For example, the social forum brings together senior leaders of social agencies to build consensus for programmes and policies.

It is also a great platform to commission important analytics projects that require data from multiple agencies – usually a difficult process. When these projects are debated and benefits delineated among senior leaders across agencies, they are more willing to share data that contribute to a common good.

Besides these successful cross-agency platforms, the Prime Minister's Office started The Strategy Group, a team of dedicated public officers drawn from various agencies, to shepherd and coax whole-of-government policy and practice.

Among many important initiatives, the group pioneered the data science commissioning platform to nudge line agencies towards a more whole-of-government approach to analytics. At the tactical level, Singapore formed the Municipal Services Office whose app is likened to a one-stop-shop for public feedback and manages the latter across several agencies to ensure a coordinated response.

In sum, analytics must leap out of research to influence practice. Successful analytics in any organisation – corporate or government – depends on several ingredients: science, art team and ecosystem. Together, they nourish a strong data-driven and evidence-based culture for data analytics to thrive.

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