THE ARCHITECT'S ROLE OF ACCELERATING AND SHAPING THE TRANSFORMATION AGENDA IN TIMES OF CHANGE

Most change happens slowly, through the ongoing process of growth, innovation and demographics. But every now and then it happens all of a sudden, sweeping away old assumptions and habits and obliging us all to do things differently. London's 'Big Bang' in its financial markets was one such change. This year's pandemic is another, as we have had to adjust fundamental aspects of our lives with little warning in a background of fear and uncertainty. In the world of work, we have had to adjust how and where we work with practically no warning. These events happen, and they will happen again. The thing they all have in common is agility and innovation. While they test us, they also present opportunities to foster innovation and unlock opportunities – when we are forced to be agile, we find we can.

The role of an architect in a modern delivery is about being able to do deal with both of these types of change – to understand incremental change, and to thrive on the unexpected sudden change. The accelerating change in technology happens sometimes incrementally, but increasingly in unexpected leaps. Our architects at Capco work embedded in our client's Agile teams, take ownership of their work, and help them adapt and innovate, whatever future challenges might be.

At Capco we are evangelists for modern architectures, design thinking and ways of working. These are key success factors for each and any digital transformation journey. Modern architecture is about enabling your IT landscape to evolve iteratively, managing the change holistically, and fostering innovation. Driven by our passion, we are evolving together with our clients to help address the challenges in uncertain times. In this article, I will explore some of the ways we do this at Capco. How has our work changed? What can we learn from these changes? How might we prepare better for future changes? And in the emerging post-COVID world, where might the opportunities lie?

HOW HAS OUR WORK CHANGED?

As COVID-19 continues, the streets and buildings of the City of London are almost empty, and it is an eerie experience. For the Capco architect, remote working has become the norm. There is no meeting room buzz, no weekly whiteboard eureka moment, no 10-minute coffee catchups, and no eating out (to help out) even, which is where the best ideation tends to come from. However, as time has shown, our architects are good at adapting to new circumstances and environments – it is in their DNA.

The impact of remote working on the modern architect has been far greater than redefining the ways that language, messaging, diagrams, and concepts are packaged and communicated. Agile has already forced that transformation to happen. 'Just in time' architecture fostered by new ways of working has already been adopted by our architects and continues to be embraced. They have already evolved from their place as a facilitator and influencer. Now it is time for soft skills to be redefined.

WHAT CAN WE LEARN, AND WHAT SHOULD WE HAVE BEEN BETTER PREPARED FOR?

The change that COVID-19 brought us can easily be seen in the most mundane aspects. We even changed what we read about in the news. Some of us might have been eagerly perusing articles about the Metaverse, 5G and quantum computing. Now, even if we read about technology it is probably about the use of technology to control the pandemic, and for those of us who run delivery programs, many of the previously mundane aspects of delivering technology have now become frontpage news. The ability to deliver robust solutions quickly has never been so visible – especially in the challenges of tracing and isolating the thousands of people who had tested positive for COVID-19. The problems that we encounter have also never been so clear, caused by simple internet outages or Excel mistakes, or even political leaders forgetting to un-mute themselves on a conference call. Architects and project managers might wonder about their risk management and contingency planning. Rather than being too judgemental, we need to understand what can go wrong with a greenfield system of high importance.

With hindsight, many of the problems that have dogged these high-profile projects were predictable and indeed have happened before – to take one example, the widespread problems caused by the 2017 AWS outage, caused by a mis-typed command (Newton, 2017). Our massively interconnected world has some obvious failure points and some of our contingency plans and risk mitigations need re-visiting.

HOW CAN ARCHITECTS PREPARE FOR FUTURE CHANGES?

1. **Get cloud architecture right:** The pandemic has once again highlighted the importance of care in architecting for cloud-based systems. At Capco we advocate for a host of models, patterns, and services rather than focusing only on the public cloud. We are also assertive about migrating workloads by re-hosting – these are only hosted services outsourcing the virtual machines, right? We advocate a highly scalable, dynamic, and extensible architecture that is largely based on the same principles no matter if on-prem, hybrid, or using its public version. We advocate and uphold the development views laying down patterned code that does not care about the infrastructure topology. Then we prescribe well-defined interfaces and standard protocols complemented with the comprehensive DevOps pipeline which are all meant to respond quickly and reliably to change.

2. **Modernize applications:** In de-monolithing discussions, the Capco architect helps clients to take a legacy application (such as a traditional client/server) and break it down. They do not only need to know by heart the new patterns, but they also need to understand in-depth the legacy approach at all levels – logic, rules, and data. The parts will form the new services, aimed to allow a fast changing, scaling, and descaling ecosystem for meeting the demand and continuously reshaping the universe

3. **Harvest the power of data:** Capco architects can help to integrate siloed systems and to normalize data access. While keeping an eye on security and privacy, they re-design data architectures to allow moderated and controlled data mining. Beyond the super-computing power provided by the cloud, there is a need for addressing the data architecture concerns. The new COVID-19 reality will produce data at a whole new scale and these new times demand enhanced business intelligence and analytics.

4. **… and evolve their own core skills:** Throughout all these times, the modern architect also has to keep up with the architectural styles' proliferation (microkernel, layered (n-tier), event-driven, microservices, space-based, serverless), the plethora of new languages, cloud native architectures, data architectures, security architecture and last but not least, embedding themself in the development teams and championing change while serving the client. At Capco, we can help to make sense of all these things and to spot the changes which matter, whether evolutionary or sudden.

TO SUM UP

Right now, at my home desk, I am waiting for my next Zoom meeting about evolutionary architecture to start, in my capacity as a Capco architect. While I wait, I recall reading memories of another moment – the Big Bang of 1986, where deregulation swooped in and emptied the floors of the London Stock Exchange in an instant. The City of London was forever changed. The industry moved away from face-to-face trading and entered the new era of electronic trading, creating the preeminent global financial hub London is today (Bellringer & Michie, 2014). On 27th October 1986, almost 35 years to the day, we felt that same eerie feeling we have been experiencing with COVID-19 – the sights and sounds of our everyday working lives have been altered once again.

To make this happen, a plethora of technology-backed support mechanisms had to be architected and developed. Patterns and technologies needed to be combined in the years before to accommodate the transformation. However, this also triggered a change in the consulting architect's language and toolset.

And, fun fact, enterprise architecture frameworks were born in this decade – PRISM (1986), Zachman (1987) and NIST (1989). (Kotusev, 2016).

Yes, change happened almost overnight and the world is evolving. It seems a good time to remember Albert Einstein's words: "In the middle of difficulty lies opportunity". (Cosmic Search, 2004) As history shows us, there is always a path the winner will take. The obvious question is, what that path is? The crux of the matter is that continuously and holistically assessing the change readiness of your architecture proves yet again to be a long-term existential must for each and any. In this context, modern architecture must be the new first-class citizen as it will define the future. The Capco architect is well equipped to second you in this exciting journey. From the Big Bang to the trying times of COVID-19, and through all the challenges that lie ahead, we are always eager to do more with less for the success of our clients. "Take us with you"! (Potts, 2010).

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