WiNG

The Wing Manifesto, Part II: The DMC Shift

OCTOBER 8, 2014 PETER WAGNER ESSAYS

Preamble

Wing is an extremely focused venture firm that helps to build billion-dollar companies in the business technology markets. We are company builders. We are not portfolio managers. We limit the number of investments we make so that we can dedicate our resources to the success of each. We also limit our investments to a select few categories where we have deep experience and relationships and see the potential to build consequential companies that are category-defining.

We believe that it’s a great time to build a business-technology company. Data, Mobile and Cloud are driving a wave of change at a scale that we see only once in a generation. It is bigger than anything we’ve seen before and creates massive potential for innovators with great ideas. We look forward to working with founders and their early teams to lead this change and build companies that matter.

This is the second part of “The Wing Manifesto”. Part I discussed how we work and our reasons for forming Wing in the first place. In Part II we turn to the unprecedented transformation underway in the business markets.

Business Markets and Technology: The DMC Shift

We believe that it’s a great time to build a business-technology company. We are at a nexus of change in business markets that will likely take 15 years to play out, and be at least an order of magnitude greater than any that has come before.

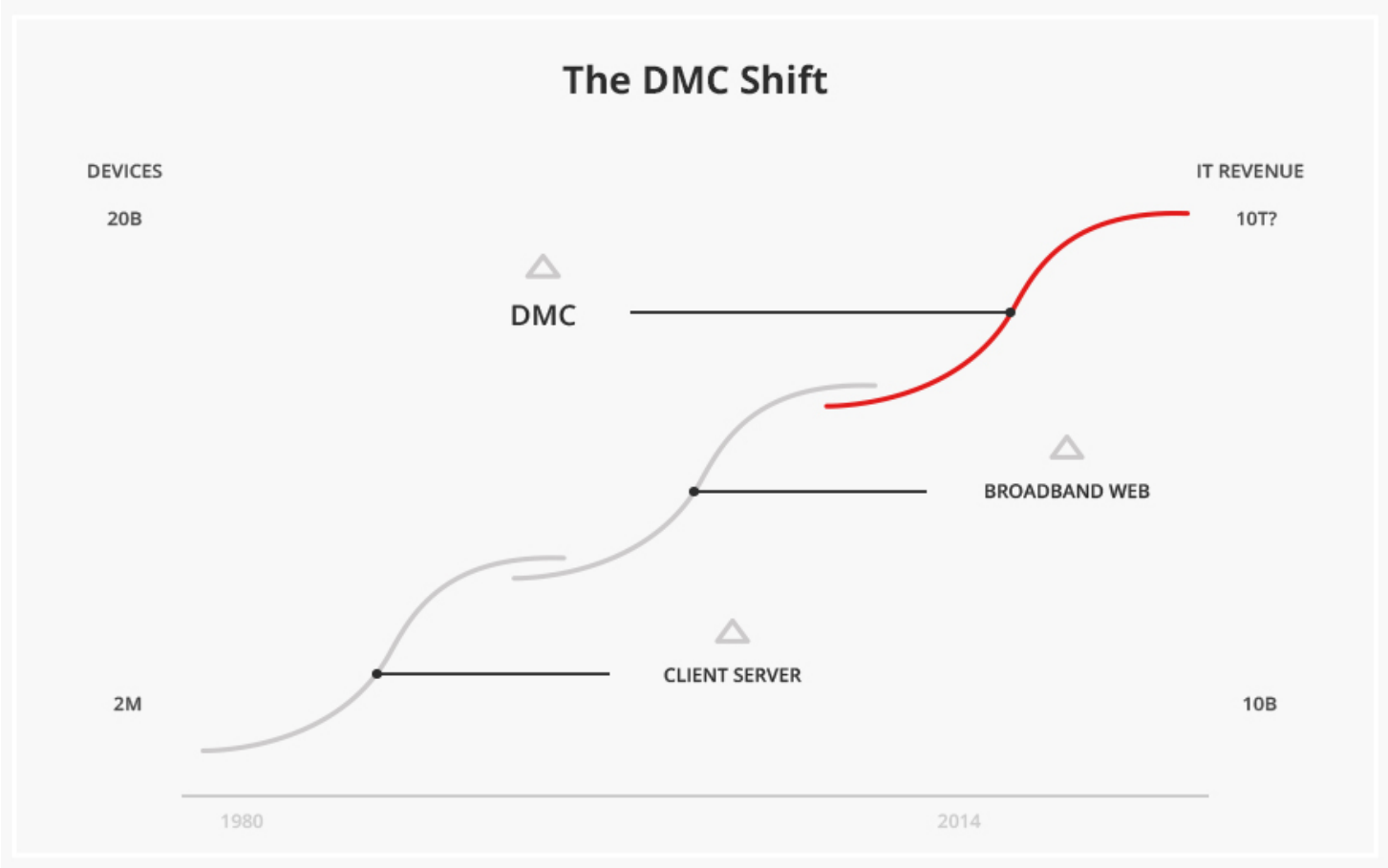
Looking at the history of our industry, we notice a pattern of transformations every 15 years or so. Each time, the number of computing devices within the new model increases by an order of magnitude, and overall IT industry revenue sees a corresponding 10x increase.

The 1982 launch of the PC might be considered the signal event in the shift from the mainframe paradigm to client-server computing. Major new industry leaders capitalized on the shift and rode it to prominence, including Microsoft, Intel, Apple, Adobe, Sun, SGI, SAP and Oracle. IBM managed to find new footing, but other incumbents like DEC, Wang and Unisys failed to adapt and fell by the wayside.

About 15 years later came the commercialization of the Internet, catalyzed by the invention of the Web and the deployment of broadband IP networking. Leaders of this era included Cisco, early Internet leaders like Netscape, Yahoo and EBay, their fast-follower and eventual overlord Google, and even later evolutions such as Facebook, Twitter and Salesforce.com.

Today we stand in the early phases of another paradigm shift. This time around there are three massive forces working together:

- The rise of cloud as the dominant back-end computing model
- The emergence of mobile as the ascendant class of clients
- The primacy of data as the new source of strategic advantage



This new “DMC” paradigm (“Data + Mobile + Cloud”) looks to be the largest yet, changing almost all aspects of IT. How should we deliver applications? How do we operate infrastructure (or do we)? How will we consume technology (or will we)? These are just some of the many bedrock questions suddenly up for debate. While businesses are keenly aware that DMC is their future, very few have yet transitioned much of their IT investment. Indeed, the steepest part of the growth curve is yet to come.

Origins of DMC

Looking back a bit, we can see that the three drivers of DMC arose independently and for very different reasons. Cloud is an idea that has been present in various forms for decades. In the late 90’s I worked with Ashar Aziz on his first startup, a company called Terraspring. Ashar had a vision for dynamic shared infrastructure that would be offered as a utility service on a self-service basis. Sound familiar? Terraspring’s vision was on target but the static technology of the day couldn’t deliver the needed flexibility and abstraction. Others including Marc Andreessen and Ben

Horowitz at LoudCloud encountered similar roadblocks. Terraspring was eventually acquired by Sun, LoudCloud became OpsWare, Ashar went on to found FireEye, and the utility computing dream was put on the back burner as the industry cleared the market wreckage of 2000/2001.

It was virtualization that brought the dream back to life. Initially the drive to virtualize didn't have much to do with what we today call cloud. The technology was pulled into the enterprise mainstream by the economic logic of server consolidation, championed by VMware. Virtualization alone was not enough, however. Another set of technologies aimed at scaling and automation was maturing in the world of "webscale" operations and what was once called "grid computing." Whereas virtualization was initially about partitioning resources to effectively (and later dynamically) host multiple workloads, grid aimed to aggregate resources to support larger workloads and deliver elastic capacity. When virtualization joined forces with these operational innovations, the cloud model as we know it today began to emerge. It found beautifully succinct expression in the self-service, rapid provisioning and auto-scaling concepts of the public cloud which captured our imaginations and changed the game. The 2006 launch of Amazon Web Services is probably as good a date as any to highlight as the dawn of the cloud era.

It is tempting to identify the iPhone launch in 2007 as the seminal event in the mobile era. While certainly not the first smartphone, the iPhone did restructure the consumer mobile industry in an ostensibly more open framework out from under the thumb of the mobile operators. Of course this new framework was largely controlled by Apple ("meet the new boss…"), but Cupertino at least understood both user experience and the needs of developers, and succeeded in creating a far more attractive ecosystem. From a business markets perspective, it may be that the 2010 iPad launch turns out to be more significant than that of the iPhone. It is the tablet that has the potential to overturn the Windows PC hegemony. The very notion that the Windows desktop was vulnerable in business markets would have been heretical even four years ago, but today's PC and laptop shipment figures already indicate the inroads being made by mobile clients.

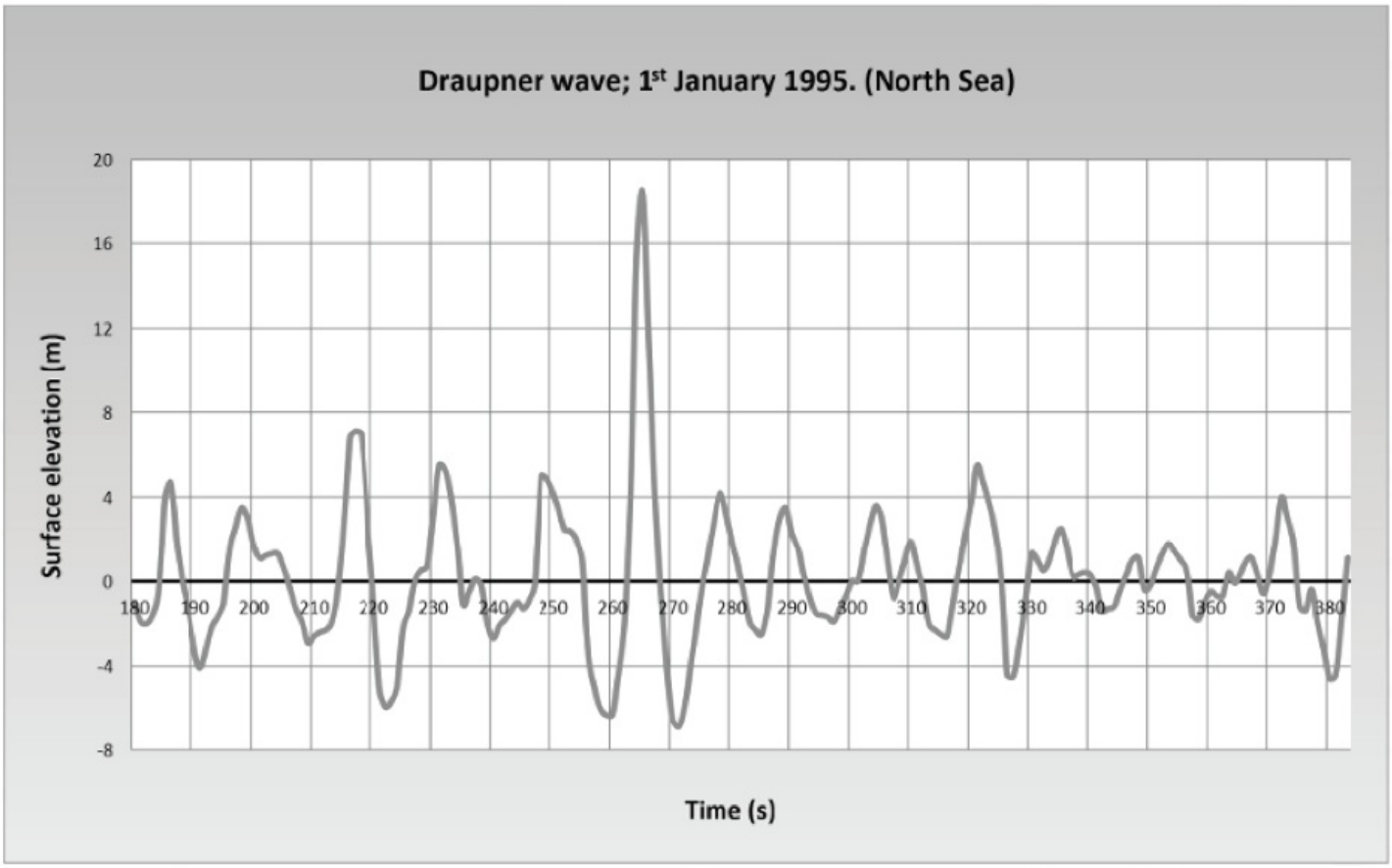
While the data revolution may seem like a phenomenon of the last few years, it has been well underway inside large consumer web companies such as Google, Facebook, Amazon and Yahoo for far longer. Working on problems such as ad optimization and recommendation engines, engineers inside these companies and others developed techniques for collecting and flexibly analyzing vast amounts of online data. Data was used to optimize a set of online customer interactions far too numerous for humans to be involved in, and of relatively little consequence

individually, but of massive consequence collectively. It was an ideal problem space in which to deploy data-driven algorithmic systems, and called for a totally new data infrastructure built for large amounts of highly varied, “low value” data without the need for a priori assumptions regarding what questions will be asked of it.

Meanwhile in business markets, enterprises were continuing to evolve their investments in data warehousing and business intelligence. These systems were used primarily by trained analysts to address a smallish set of business questions, each of high importance – the opposite end of the spectrum from where the webscale data scientists were training their algorithms. Eventually the webscale techniques began to see application in other companies and on other problems in financial services, life sciences, retail, telecom and other massive industries, setting in motion a wholesale transformation not only of the data infrastructure, but the way businesses think about data itself. Today we stand on the cusp of a massive rethink of how data can be used for strategic business advantage.

DMC: The Rogue Wave

“Rogue waves” are waves of exceptional size relative to the existing sea state. Once thought to be only legend, they occur when previously distinct waves for some reason merge to form a new wave of unprecedented scale. As far as technology shifts go, DMC is a rogue wave.



Wave data recorded at the Draupner platform in the North Sea on January 1, 1995, generally considered to be first measurement of a rogue wave.

Source: Taylor PH. The shape of the Draupner Wave of 1st January 1995.

The three DMC drivers arose for unrelated reasons, and independently became powerful. But it is their confluence that has given the DMC shift its unusual power. As cloud resources became increasingly available and capable, they emerged as the back-end infrastructure of choice for new mobile applications. This in turn opened up new possibilities for developers, who could exploit an ever widening array of cloud-based services to underpin their increasingly sophisticated mobile applications. The cloud + mobile linkage has progressed to such a degree that several key software strategists have come to believe that mobile is now the primary driver of innovation in the cloud.

Data acts like a supercharger of this virtuous cycle. Cloud infrastructure and mobile clients are themselves enormously fruitful sources of data, serving as powerful instrumentation of all sorts of system and human interactions. We can think of cloud-based servers and ubiquitous mobile devices as “super-sensors,” meticulously gathering data on all of our interactions and transactions not only in cyberspace, but also in the physical world. The cloud is also often the optimal model for the storage and analysis of this data, and mobile clients are rapidly becoming the primary mode for data

presentation, visualization and interaction. While the role of data has initially been as an agent of optimization, a “special ingredient” used to enhance operational systems, we can already see the day emerging where data is the main event.

It’s hard enough for an incumbent to grapple with a change in even one core assumption upon which its business has been built. To deal with three at once is almost impossible. It is a difficult time to be an incumbent, and a great time to be an attacker.

DMC Winners and Losers

Just as in prior paradigm shifts, the DMC transformation will create new, powerful market leaders. Amazon, Google, Salesforce and Apple have ridden the early phases of DMC to positions of strength. On the other hand, PC/server vendors like HP and Dell have been among the first to suffer, as their desktop business gives way to mobile, and server workloads migrate to the public cloud (the land of open source and open compute, where they may as well be lost forever from a vendor point of view). IBM has taken its share of pain in the early innings but appears to be assembling a viable strategy for managing the transition. Microsoft’s Windows franchise faces it first real challenge in decades, and the day may be coming when we think of Redmond as Azure plus Office. Cisco’s entire business model is in jeopardy as Open Networking takes hold in the largest data centers, including PC-style commoditization of their vertically integrated boxes. Premise-based software businesses like Oracle and SAP have barely begun their difficult leap to cloud-based service delivery. Traditional security vendors like Symantec and McAfee face existential threats, as customers turn to new approaches native to the new risk landscape. From an enterprise incumbent point of view, there has been more bad news than good.

Then there is VMware. The company did a masterful job establishing itself as the most important enterprise software platform of the last 10 years. But no sooner had they reached the pinnacle, than the emergence of the public cloud began to undermine them. It’s an open question whether VMware will find itself swamped by its own wave.

Disrupting the Corporate IT Organization

DMC-driven disruption will not be limited to technology vendors. Customers will see their worlds rocked as well. The most obvious impact is on the traditional corporate IT organization. Roles and responsibilities have been largely defined by the ownership and operation of specific assets (e.g. servers, databases, desktops, etc.). Existing IT management systems and even job descriptions reflect this asset-oriented, siloed status quo.

In the DMC paradigm, many of the IT assets will be owned and operated by cloud-based service providers, and some, such as mobile endpoints, will be owned by employees. In addition, IT management systems will be increasingly service-oriented. IT will have to evolve to the role of service definer, broker and monitor and line-of-business organizations will increasingly consume technology products directly, with little or no involvement of a central IT gatekeeper. While this brings opportunity, it will require development of a new set of skills in these groups to take full advantage.

Even as traditional IT buyers work to reinvent themselves, their suppliers must question whether this is really the group they want to be selling to. Many technology vendors have realized they are far better off selling to Line-of-Business decision-makers. Even more radical visions eschew selling technology at all, integrating all the way to the delivery of a valuable business input. Such “full-stack” strategies are increasingly visible in the consumer sphere. Uber is today’s canonical example but others have gone before, including Netflix, E*TRADE and my personal favorite, Pixar. We expect to see an increasingly interesting array of such forward-integrated attackers in the business markets as the DMC shift rolls on.

With both customer and vendor positions in flux, are we finally seeing the breakup of the “IT / Industrial Complex,” that closed and clubby web of relationships, lock-ins and legacy that has long dominated business technology budgets? We already detect greater openness amongst even conservative enterprises that are proactively engaging with young innovative companies with an urgency we haven’t seen in nearly 15 years.

Where the Next Billion Dollar Companies Are

Let’s imagine a business world based on the DMC paradigm. In this world, cloud-based services are the prevalent model for the delivery of IT to business customers. Mobile endpoints represent the standard client interaction model. And data infuses every stage, as both an input and output of these systems, multiplying value in the process. As businesses embrace DMC, their existing IT estate must evolve. Hundreds of billions of dollars of budget are in flight. Incumbents enmeshed in the old model are threatened, and new leaders will emerge native to the new paradigm. Large opportunities for not-yet-seen business services enabled by DMC will emerge, spawning new dominators at the top of these emergent categories.

At Wing we spend much of our time trying to understand where the next set of DMC-driven opportunities will arise in business technology. The list is long and constantly evolving, and is the subject of the next part of “The Wing Manifesto”…

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http://wing.vc/perspectives/essays/the-wing-manifesto-part-ii-the-dmc-shift
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