THE FAST FUTURE BLUR

DISCOVER
TRANSFORMATIVE
INTERCONNECTIONS
SHAPING THE FUTURE

FACULTY FROM
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Foreword: Ambiguous, Adroit and Around Corners: The Era of Future Blur Leadership

Nitin Rakesh, CEO Mphasis

In history, we use 'once in a generation' to refer to tectonic shifts in our world, be it geopolitics, technology, business models or societal changes. We have seen the word 'great' attached to these events, the great recession or as in recent times, the great resignation. But what if 'once in a generation' is now experienced every 3 years instead of 50 or 100? Exponentiality, speed and specializations are all coming together to create challenges that have never been experienced before.

Anticipation is no longer just a desired but an essential skill among leaders. Anticipation is a capability that organizations need to master, where strategy is an exercise in fluidity and execution is an exercise in adaptability.

Societies around the world grapple with shifts in technology, climate, labour migration, a push towards localization, the imbalance of talent availability and finally a global currency order that is being challenged by the emerging world. These make it incredibly harder for leaders and companies to lead their businesses while driving an innovation, growth and customer agenda of their future.

We know that there will be multiple transformative 'once-in-a-generation' events over the course of the next decade. The only way to navigate these successfully is to master thinking at the intersections of multiple industries, disciplines, technologies and cultures. It needs leaders to reimagine the nature of disruption itself.

Reimagining Exponentiality

Exponentiality has always been indicative of change or impact that overhauls all known or normal assumptions. The era of blurs, when there are so many influences on a business, is seeing an impact beyond normal understanding of exponential. How can you reimagine exponential?

Take the example of climate change. Over the past few years, we have had multiple exponential events that are on scale that most cities or public administrations were not geared up for. Humans like to anchor to places, to locations associated with their heritage. When this becomes impermanent, the assumptions of lifelong stability change. Due to these changes, we have also seen changes by insurance companies in how they manage their business. We now have locations where insurance is no longer an option for protecting a business or a house.

Reimagining exponentiality is understanding that tectonic changes are real. Covid was an event that most people of the new generations never imagined as possible. But it did happen, and it did change human habits at a 'full human scale' of 8 billion people.

A similar event is in progress with AI. Changes that seem distant are now suddenly real and mainstream. We are already living in a world where millions of people use products or services that

are AI driven, even without realizing it. But the aspect that this has a multidimensional impact makes it exponential reimagined. This is not just a graduation from a calculator to spreadsheets. The impact on daily lives is so immense that it cuts across so many aspects of life on our planet. The pervasiveness of this technology, while still in the early adoption curve, is an example of exponential reimagined.

Reimagining Speed

The fastest humans can travel today is possibly on a space rocket. An earlier case was the Concorde aeroplanes, which flew for 27 years at Mach 2.04 before they were retired. Modern fighter jet pilots achieve high speeds. For most normal people, even watching a Formula 1 car race at about 250 km per hour is scary.

For many years, speed has been spoken about, but most businesses never put that as a central principle of business. Organizations are built to last. Frameworks applied are meant to create a predictable outcome through repeatability, efficiencies and retention of knowledge. Organizations' approaches and habits reflect this efficiency or repeatability mindset. The planning to strategy cycle, budgeting processes, talent planning to hiring cycles are all built around predictability. Investors don't like surprises and at the same time, leaders don't like to shift quickly as it results in internal chaos.

Very few companies have understood and used speed as a competitive advantage. However, speed is not an input, or a factor of time as used in project management. These companies and their leaders think at the intersections of multiple disciplines and apply those learnings to their business context. While companies continue to build their domain dominance, many of their innovative approaches often are learnings from other sectors. This enables leaders to be on an 'always learn' mental model that helps them adapt their companies in real time, often building capabilities ahead of time.

Reimagining Interconnectedness

We have educated, trained and rewarded leaders over the past 50 years to lead and run predictably. The assumptions of a generation continue to be made irrelevant and redundant at a speed never experienced before. Technologies that seemed distant become mainstream and change the habits of people. Businesses that viewed capabilities as belonging to another industry get disrupted by the very same capabilities.

In any industry, the ability to see around the corners is dependent upon how leaders connect dots that are seemingly unrelated. The ability to understand the interconnections between multiple disciplines is critical to shape strategy in ambiguous and fluid environments.

The ability to interconnect multiple disciplines is counter intuitive to how leaders and professional have been trained. Our education system categorizes you into specializations. Careers are built in domains where expertise is built over years. As a result, we find it difficult to understand the need to develop the interconnected view both within and outside an industry. Some of the best disruptions have come from ideas that exist outside an industry. Fintech and Technology sectors are two examples of this.

But how does one practise interconnected learning? Professionals and leaders who demonstrate this curiosity and comprehension are best placed to shape strategy in fluidity.

Being a Fast Future Blur Leader

A Fast Future Blur Leader (Figure 0.1) is one with a speed bias, to learn, understand, connect and apply seemingly disparate ideas of the future; today.

This is a perfect summary of all three areas that are being reimagined in a world where lines blur to create both; new opportunities and unknown challenges. The best way to learn for the new world

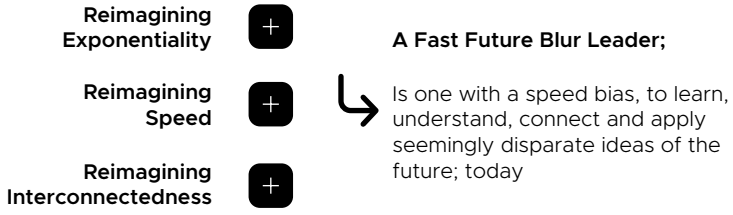

Figure 0.1 A fast future blur leader.

is to reimagine how you learn and apply ideas. Learning broadly and interconnectedly builds a comprehensive knowledge and skills base that gives you the agility. So, when change comes suddenly, you are ready.

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Chapter 1
The Fast Future Arsenal: Unbundling, Rebundling and Innovating at the Intersections

Sangeet Paul Choudary

My daughter loves her Lego sets. Over the years, she's acquired a range of Lego sets – ranging from cityscapes to complex motor vehicles – and built them block-by-block as per the instructions. But once built, she promptly pulls them apart – block-by-block – and throws them in with the pile of all the Lego blocks across all the Lego sets she's ever acquired. Lego's prescribed recipe holds her interest for exactly one iteration.

Once disassembled, that growing pile of Lego blocks is where the magic lies. A wheel from a dumpster truck ends up as a roller skate for a 'Lego alien' she's been creating. A triangular wing off an airplane set ends up as a skirt pleat on a large Lego doll she's been working on. She returns to that pile every day to create assemblies limited only by her imagination.

Over the past couple of decades and more, every new generation of digital technologies has had one repeated effect on the landscape of enterprise value creation – reduction in transaction costs that emerge in inter-firm coordination.

These falling transaction costs transform the landscape of value creation into a pile of Lego blocks – building blocks of value that can be recombined into new business models. All business model innovation today follows a cycle of unbundling and rebundling, much like throwing Lego blocks into a pile and reassembling them in innovative new ways. Traditional boundaries of business model innovation no longer hold sway. Value is increasingly created at the intersection of previously unconnected domains, where you find fundamentally new ways to recombine – or 'rebundle' – these building blocks to solve problems for customers.

Business Legos – the Economics of Unbundling

Transaction costs [1,2] determine the manner in which firms organize themselves and interact with other players. To minimize transaction costs, most industrial-era firms engaged in vertical integration.[3] Integration offered greater control and minimized transaction costs by absorbing all value-chain activities inside the firm.

But with the rise of digital technologies, three specific changes play out[4]:

First, global connectivity – powered by smartphone penetration and social technologies – have driven the creation of a global network of connected producers and consumers of value, allowing businesses to specialize in certain activities and coordinate with other firms for other activities across the value chain.[5]

Second, the adoption of the cloud enables interoperability across value chain activities.[6,7] Firms increasingly specialize in a few activities and attract partnerships for complementary value creation. 'Do what you do best, partner for the rest'.

Finally, the growth in data generation and aggregation,[8] largely driven by global adoption of social technologies and sensors,

> coupled with improvements in machine learning and artificial intelligence (AI), enables firms to coordinate across many more partners and interfaces at scale, leveraging data to manage coordination at these interfaces. Firms can also exercise control over resources and actors without requiring explicit ownership or traditional employment relationships.[9,10]

As a result of these three factors, business capabilities are increasingly getting unbundled from the vertically integrated structures that dominated the industrial era. Using application programming interfaces (APIs), firms can effectively open up digital capabilities and services to external stakeholders, and plug-and-play with each other.[11] Today's business operates more like a huge pile of Lego blocks. Business capabilities are modular and can plug-and-play across each other.

Consequently, this vertically integrated value chain starts to unbundle[12] and new specialized firms emerge. With lower transaction costs, these firms increasingly plug-and-play across a growing landscape of unbundled specialized firms.

This also enables firms to more easily co-create value with creators of complements.[13] For example, mobile applications act as complements to a smartphone's operating system, increasing the scope of the phone's functionality. Similarly, cloud-hosted software programs like Slack, the enterprise chat software, and Zoom, the video communication tool, interoperate with a wide variety of applications using APIs, thereby enabling a large scope of functionalities for consumers.

In this new landscape of value creation, unbundled firms increasingly specialize in key activities and invest in ensuring their interfaces (comprising technology, process and people) are designed towards smooth plug-and-play value creation with partners.

The Cycle of Unbundling and Rebundling

Unbundling disrupts the status quo.

Fintechs specializing in one activity unbundle the financial services value chain, healthtech firms specializing in one aspect

unbundle healthcare and specialized energy startups unbundle (and, indeed, reimagine) activities of traditional utilities.

However, unbundling leads to higher coordination costs.[14] Moreover, while digitization reduces many forms of transaction costs, certain transaction costs – particularly those related to ensuring safety, managing quality and enforcing property rights – increase.[15]

These costs are resolved through rebundling.[16] Rebundling involves bundling multiple unbundled capabilities into a cohesive customer-centric offering. This is where value is recombined towards solving a customer problem.

Industrial-era firms operated within prescribed industry boundaries determined by the boundaries of the production process. Rebundling operates not around production processes but around customer value propositions. Consider the financial services industry, for instance. The industry boundaries are structured around traditional financial products. But in a connected world, an integrated customer value proposition may have to be bundled using components across multiple industry boundaries – housing, automotive, local commerce and others.

Much like the specific configuration of Lego blocks prescribed in a Lego instruction booklet, industrial-era firms embodied business models that were inelastic and unresponsive to consumer needs.

True innovation – as my daughter discovered – lies in unbundling these blocks, throwing them back into the pile, and 'rebundling' them to create entirely new creations, many of them having been created for the first time in the history of mankind (Figure 1.1).

Rebundling also enables sustainable value capture.

In the news media industry, the traditional newspaper bundle was unbundled by digital distribution on the web. Eventually, Facebook rebundled it as a news feed and arguably Google did the same through its search engine. Both 'rebundlers' then centralized advertising power and moved it away from the old bundles.

Similarly, in the music industry, file-sharing services like Kazaa and Napster unbundled the music album (the original bundle) but Spotify's playlists rebundled them and successfully captured value.

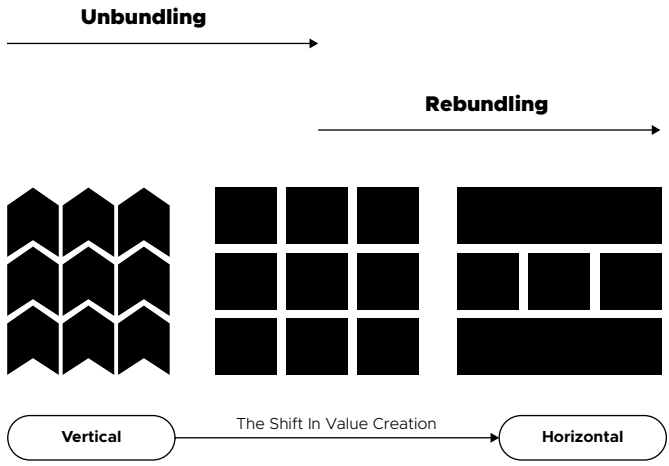

Figure 1.1 Illustrative diagram of the shift from vertical to horizontal value creation through unbundling and rebundling.

In both these examples, unbundling served to unseat incumbents but it was only through rebundling that value successfully accrued to new players.

Rethinking Value with Rebundling

As new digital technologies increasingly unbundle value chains, rebundling holds the key for the Fast Future Executive. Unbundled services won't sustain unless they serve as beachheads to attract customer engagement and then leverage that customer chokepoint to rebundle services around key consumer needs.

Consider Square, which started with a smartphone-based point-of-sale terminal for merchants on the move. Using this beachhead, it has expanded to an end-to-end financial services bundle centred around the merchant, spanning financing, payroll, payments and more.

Typically, rebundling follows three key steps centred on consumer needs.

First, the firm uses an unbundled service to gain primacy of consumer relationship.

Square started out by offering a dongle attached to a phone, allowing you to swipe a credit card and process payments. This dongle converted the phone into a mobile point-of-sale (POS) terminal, allowing service providers providing home delivery and off-location services to accept card payments using their phone.

Second, the firm leverages this customer relationship to capture data and construct superior personalization and user reputation models.

Square's dongle allowed it to capture a unique form of data – payments data for transactions that had previously been carried out in cash. Capturing money-in, money-out data allowed Square to start building credit scores for this group of merchants, thus far underserved by traditional banking.

Finally, using these superior data models and leveraging its primacy of customer relationship, the firm rebundles other services around the consumer.

Today, Square rebundles a host of merchant services around its payments suite. The Square Card – a debit card that allows merchants to access money in their Square account – allows Square to act as the de facto bank account for merchants in the cash economy. Square Capital lends money to merchants using credit scores built on actual sales data from their POS terminal. Square Cash – typically a consumer-focused solution – also serves as a light payroll application, allowing merchants to directly pay their employees through the application. Square also manages the merchant's customer directory and provides integrated analytics across the merchant's activities.

Platforms and Standards – the Purveyors of Rebundling

In a connected landscape of value creation, rebundling is best achieved[17] through two mechanisms: promoting open standards and setting up proprietary platforms.[18]

Firms may create the basis for rebundling by agreeing and aligning on open standards. Standards enable rebundling as multiple firms build towards an agreed standard, ensuring greater interoperability across their products and services. In general, standards are specifications that determine the compatibility of different technological components. Standards increase the ability of firms building these components to coordinate their activities towards solving a customer problem.[19]

Consider, for example, the USB standard popularized by Intel which simplified and standardized connections of computer peripherals to the personal computer, allowing device functionality to be unbundled from the personal computer and rebundled based on the user's needs. For instance, a user could now supplement external memory, performance and interface needs by merely plugging in relevant devices to their PC.

The adoption of a common standard by all market participants increases the availability of solutions that serve as complements to that standard[20] – as with the explosion of peripherals in the PC market example above, with the adoption of the USB standard. This creates a network effect where greater usage of the standard is strengthened by the availability of more complements, driving further adoption of the standard. This eventually leads to 'winner-take-all' outcomes where a single standard may dominate.

Beyond standards, platforms are today a far more dominant agent for rebundling.

A platform[21] is a business based on enabling value-creating interactions between external producers and consumers. A platform provides an open, participative infrastructure for these interactions and sets governance conditions for them. Platforms generate value by reducing transaction costs and coordinating diverse external actors. They also benefit from network effects, particularly indirect network effects, where greater participation by producers of complements increases the platform's value for consumers and vice versa.

Platform firms own key control points[22] or competitive bottlenecks which other partner firms need to access. The ownership of these control points provides strategic leverage to the platform firm. For instance, platforms like Google and Facebook control user

relationships and data which provides them leverage over other ecosystem firms looking to target these users.

We are increasingly seeing the rise of platform-mediated rebundling of value chain activities across a whole range of industries,[23] including financial services, logistics, manufacturing, and healthcare.[24,25,26]

Healthcare Legos: Unbundling with APIs, Rebundling with AI

Armed with the tools of unbundling and rebundling, let's look at an industry where two key shifts – increasing deregulation driving the adoption of APIs, and improving technological benefits of AI – are working together to create a new landscape for value creation.

Care delivery is increasingly becoming modular, as it gets unbundled from traditional care facilities.[27] The proliferation of sensor-enabled wearables[28] has driven the rise of self-assessment by consumers and remote monitoring of patients by providers, unbundling care from traditional facilities. Urgent care clinics,[29] retail medicine[30,31] and telehealth,[32] have also created new models of care delivery.

Away from the consumer, producers – healthcare providers, pharmaceutical manufacturers and healthcare device manufacturers – are increasingly adopting cloud-hosted infrastructure[33] to manage their business processes.

The unbundling of healthcare delivery from traditional institutions and the shift of healthcare production to cloud-hosted infrastructure are driving greater modularity across the healthcare value chain, transforming it into a pile of Legos that can be increasingly recombined into new business models.

While unbundling healthcare delivery increases consumer choice, the lack of data interoperability, for example Electronic Health Records (EHRs) interoperability,[34] creates a fragmented patient journey, as patients cannot easily port their data from one provider to another, or integrate data from wearables with their

EHR data. Despite greater consumer choice, the coordination costs to drive end-to-end patient care increase.

However, two key shifts – *increasing data interoperability* and *improvements in AI and machine learning* – are driving down coordin ation costs, leading to new value creation through rebundling.

First, increasing data interoperability, driven through the adoption of FHIRs (Faster Healthcare Interoperability Resources), enables the *creation of standards*[35] for data exchange, allowing developers to build APIs to access datasets across different systems. FHIRs allow sharing of specific pieces of information[36] without passing along entire documents, which also further increases modularity.

The second shift, improvements in artificial intelligence (AI) and machine learning (ML), change the economics of healthcare production and delivery, allowing platforms to establish a key control point for rebundling, to coordinate activities across the healthcare value chain.

AI and ML play two key roles in healthcare.[37] First, ML models that analyse structured data – imaging, genetic, EMR data and so on – may be employed to study patient populations or perform diagnosis for specific patients.[38] Second, natural language processing (NLP) techniques[39] process unstructured data – clinical notes, voice recordings and so on – to create machine-readable, structured data. This structured data can then be analysed using ML.[40]

Advances in AI and ML commoditize prediction.[41] With growing data interoperability and accessibility, predictions become more accurate as well as more applicable across a wider scope of diseases.[42] This reduces the cost of medical diagnosis, which can now be increasingly performed by machines. This, in turn, makes it feasible to perform diagnosis more frequently and easily, and also unbundles diagnosis from traditional care providers.

At the consumer end, this enables an increasing number of diagnoses to be performed as ongoing self-assessments, aiding disease management outside the care facility. Back at the healthcare provider, doctors and radiologists can now spend less time diagnosing,

and make more granular judgements on the appropriate intervention on the basis of these diagnoses.

Next, the ability to extract data from unstructured notes and voice records reduces operational overhead for doctors, while a home-based voice assistant can better capture patient data without requiring the patient to visit a care facility.

By commoditising data capture, assessment and diagnosis, the frequency of these activities may be increased, while also unbundling them from in-facility patient interactions.

Effectively, improvements in AI and machine learning, coupled with increasing data interoperability, drive unbundling across the healthcare value chain and set the stage for rebundling.

Consider Google's healthcare strategy rebundling healthcare operations, diagnostics, drug R&D, surgery, and claims management, around the adoption of Google Cloud. The HIPAA-compliant[43] Google Cloud, combined with the Google Healthcare API,[44] acts as the initial beachhead enabling healthcare providers to store and aggregate data across multiple sources. Further, Google's DeepMind enables access to diverse, siloed data in a standardized format, enabling a wider scope of data elements to be analysed for clinical decision making.

Closer to the consumer, Apple is rebundling a range of healthcare services using the Apple Health Record[45] as a key control point. Apple's Health Record aims to be the central health record for users, combining data from acute care – currently stored in EHRs – with data from a variety of wellness and disease management devices and services, using FHIR-based integration. Apple's partnerships with health systems and EHR vendors[46,47] enable it to integrate EHR data with the Health Record. Apple also partners with Health Gorilla, a clinical data API exchange, to integrate diagnostic data.[48]

Apple's Health Record acts as a key control point rebundling across five diverse communities of producers looking to access these consumers – developers, device manufacturers, healthcare providers, pharma companies and medical researchers.

First, Apple provides access to its health record API to third parties through a software development kit called HealthKit.[49] Every

app connecting to HealthKit may access data from the Personal Health Record. Prominent device manufacturers, like Nike and Jawbone, use the HealthKit API to integrate their devices as complements to the Personal Health Record.[50]

Next, Apple's CareKit[51] enables care providers to develop apps that monitor patients across the care pathway, particularly to manage chronic diseases.

Finally, Apple's ResearchKit[52] enables medical researchers and pharma companies to conduct studies leveraging the iPhone's user base. Apple makes it easier to identify, target and recruit eligible candidates for a research study, based on their health-record data.

Apple, Google, Microsoft and Amazon are also bundling connected devices and services around their respective consumer touchpoints.[53] The Apple Watch Series 6[54] includes an electrocardiogram and a blood oxygen monitor. Medical device complements may include diagnostic tools that physically connect to the iPhone[55] or integrate with the Apple Watch.[56] Google's research experiments with the Study Watch[57] indicate that it is likely to use connected wearables to assess, diagnose and manage diseases. Amazon's wearable Halo captures a variety of healthcare indicators using 3D body scans and voice tone analysis.[58]

In addition to building proprietary platforms for rebundling, BigTech firms also engage in open standards development. Open standards development may help change the competitive dynamics in an industry by commoditizing incumbent advantages.[59] While traditional firms, particularly EHR vendors, resist interoperability in healthcare, the BigTech firms are working together to promote open standards. Google and Amazon have joined efforts to support FHIRs through Project Blue Button, which aims to make it easier for patients to view and download their health records.[60,61] They are also implementing the standard in their cloud infrastructure and consumer-facing applications. Google's "Cloud Healthcare API" provides a solution for storing and accessing healthcare data in FHIR format,[62,63] while Apple has implemented FHIRs in its consumer-facing Health Records.[64]

Through a combination of open standards and proprietary platforms, these firms work on rebundling value around key user

journeys – both for consumers and for producers, while also setting up control points that make other value-chain actors dependent on them.

Innovation at the Intersection

Firms engaging in rebundling actively try to shape the boundaries of their partner ecosystems, not just their own role within it. Much like Lego recombinations defy the instruction booklet, and indeed the boundary of a specific Lego kit, the new ecosystems that emerge from such innovation no longer adhere to traditional industry boundaries nor is such innovation restricted to domain expertise within that industry.

Effective rebundling requires innovation at the intersection.

In the industrial era, competitive advantage was built around managing scarce supply-side resources (e.g. oil, minerals, etc.). The production processes that converted these resources to usable products defined industry boundaries.

In the digital era, competitive advantage is built around managing scarce demand-side resources (e.g. consumer engagement and data). Accordingly, traditional industry boundaries and domain definitions are no longer relevant. Managing the scarce resource of consumer engagement requires firms to become customer-centric and rebundle all capabilities required to deliver a customer-centric offering.

To effectively rebundle towards solving a customer problem end-to-end, the Fast Future Executive needs to work across domains and across industries, no longer bound by their production boundaries, but focused solely on whatever it takes to deliver the end-to-end customer journey.

The Fast Future Arsenal

Understanding unbundling and rebundling is key to understanding new value creation in the digital economy. Unbundling dissolves boundaries of value creation, rebundling redefines new shapes in which value is created.

Understanding the mechanics of unbundling and rebundling is critical to answering (1) how we maximize value creation while preventing wealth concentration, (2) what we regulate and what we do not regulate, and (3) where we cooperate and where we compete.

The tools of unbundling and rebundling in the Fast Future arsenal also present a fundamentally new approach to innovation. In this landscape, value lies in staying laser-focused on customer needs and innovating at the intersection of diverse, even unconnected domains, to create a cohesive bundled solution that solves the customer problem. This book is your guide to identifying those powerful intersections and spotting opportunities for new value creation.