

The background of the cover is a photograph of the London Eye Ferris wheel and a classical building with arched windows, partially obscured by trees in the foreground. The image is split vertically, with the left half in color and the right half in a light, faded grey.

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3rd edition

Extract from

# **FIT FOR PURPOSE**

**Bonus Chapter 5 Plus:  
A 360 Degree View on the Way  
to the London Eye**

**Revised Chapter 6:  
Unicorn Hunting or "Open all  
hours"**

## Bonus Chapter 5 Plus: A 360 Degree View on the Way to the London Eye

### Fitness for Purpose has many stakeholders

“The weather’s clearing up!”

It is a dark, chilly, wintery day in London in early February. It’s been raining most of the day. David and his companion are sitting finishing a late lunch in their hotel restaurant on Bayswater Road.

“Let’s go to the London Eye. We can get there before sunset. Should be a good view if these clouds clear off a bit.”

David orders the bill, signs it to his room, puts on his warm winter coat, grabs his umbrella, and they step out onto the pavement. Thrusting his umbrella skyward, he looks right, for an oncoming cab. The first two are taken. “Ah here’s one.” Third cab pulls over to the edge of the road as the passenger side window winds down.

“The London Eye?”

“Sure! Jump in then.”

David holds the door open for his girlfriend, and they both jump into the back of the taxi.

“Still got your brollie then?”, asks the driver.

“Yes, I don’t trust the rain to stay off.”

“Still it’s clearing up. Should be a nice view from the Eye before sunset. And it won’t be too busy today neither.”

“So, where you in from then? What brings you to London in this weather?”

“We got stuck at the airport yesterday. Light dusting of snow. Caused chaos. We waited 4 hours to disembark. We’re stuck here for two days until our connection to Lisbon is available.”

“Well might as well make the most of it then. The airline is paying for your hotel?”

“Yes, one of the benefits of buying an expensive ticket and sitting in the front of the plane. They do look after you when something goes wrong.”

“Well it isn’t a bad place to get stuck is it? London?”

The taxi pulls up at a red light, and traffic from the left starts to stream across and turn in front of them.

“Is that one of those new electric taxis?”, says David, gesticulating in the direction of a slightly larger, slightly squarer looking, shiny new black taxi.

“The TX?”, says the cabbie. “Yes, that’s it. You don’t see many of them yet. They’ve had some problems with the meters, and honestly, they’ve only been around for a month or so. However, we’ll all have them

eventually.” David knew that Transport for London had regulated a switch to electric taxis in order to clean up pollution in the city centre. However, they had allowed for a long transition period to enable the existing fleet to be replaced naturally as they reach the end of their useful working life.

“What do you think of it then? Will you be getting one soon?”, asks David.

### Transitioning to Zero Emission Capable Black Taxis

“Well they are more expensive for a start. Ten thousand pounds more expensive. And then there is another fifteen hundred quid in taxes just to rub salt into the wound. And you have to ask who is going to pay for that? The fares are regulated. You pay the same in this cab as you would in that one. So, how is the driver supposed to finance the extra cost? There needs to be some sort of government scheme to subsidize the switch over or it is going to take a long time.”

“And then there is the maintenance, no one is quite sure how long the batteries will last or what it will cost to replace them. And the rest of it, well you can’t really service them yourself. You know, this generation of the cab, the TX1, 2, and 4, they’ve all had different diesel engines: Nissan in the early ones; then a Ford engine<sup>1</sup> that was really cheap and easy to service; and then this one has a Fiat engine<sup>2</sup>. Some of the models have been more reliable than others. But mostly, we can always service them at home, or at a local garage, you know like, under the railway arches, grease monkeys, clever blokes and they don’t cost nothing. With these new electric vehicles, we just don’t know. A lot of drivers are playing wait and see.”

They’re past Marble Arch and heading down past Mayfair towards Buckingham Palace.

“And then there is the range. It only goes 60-70 miles on a single charge. You see most of us cabbies, we don’t live in London any longer, like in the old days. Many of us, we’re living 50 to 60 miles out of town these days. Most of us have a 30-mile commute before we can switch the meter on, and start making money. Well we worry about the battery range, don’t we. And what if we run out mid-shift, then you waste a couple of hours waiting to recharge. No one wants that. And there ain’t enough charging points yet, neither. The borough councils don’t want to put them in, do they, because it takes away valuable parking spaces, inconvenient for the public and they lose revenue from the meter an all.”

“So, the dirty secret is that it’s a hybrid. It has a small petrol engine. The idea is that you run the petrol engine while you’re commuting then switch on the battery when you reach the city limit and turn on the light. When the light is on the car runs on battery and when it’s off and the meter isn’t running then the petrol engine kicks back in. I don’t know anyone who’s got one yet. Everyone is waiting to see.”

“So, is the government doing anything to encourage you to switch?”

“Well their plan is to force us to switch by limiting the age of the taxi before it has to be retired. Normally, it is 15 years, but they are going to take one year off, every year, and force us all to switch by 2030 or thereabouts.<sup>3</sup>”

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<sup>1</sup> <https://en.wikipedia.org/wiki/TX11>

<sup>2</sup> <https://en.wikipedia.org/wiki/TX4>

<sup>3</sup> <http://content.tfl.gov.uk/taxi-age-limits-additional-information.pdf>

It wasn't long since the first edition of "Fit for Purpose" had been published and David listened fascinated to this story, recognizing that it isn't just the passenger who matters, there are multiple stakeholders. The drivers are mostly owner operators, and they have to purchase and maintain the vehicle. It also has to fit with their lifestyle. Cabbies can no longer afford to live in the recently gentrified East End of London, instead they live further out.

Meanwhile, the regulating authority, Transport for London, the Greater London Council, and the national government all have an interest in making the city cleaner and quieter. They passed the legislation and issued the regulations to take Diesel-powered vehicles off the road. All new black taxis must be electric, since 1<sup>st</sup> January 2018<sup>4</sup>. They are acting in the interests of those who live and work in London daily, and many of us who visit regularly. A quieter, cleaner city is a much better place to live, and the public health benefits of removing diesel fumes from the atmosphere must be significant. The switch should produce a cleaner city, with healthier children, fewer respiratory illnesses, and fewer kids with inhalers. Quality of life for everyone improves. However, the new rules ask the taxi drivers to carry the burden of the cost of the switch, assuming a 15 year life for a vehicle then the change amounts to an increase in taxation on the drivers of around one thousand British pounds per year. And their unwillingness to carry this burden means that the changeover will take far longer than might have been assumed.

In 2019, Nissan introduced a rival model, and a pure electric taxi called the Dynamo.<sup>5</sup> The government introduced a seven thousand five hundred pounds subsidy to encourage drivers to make the switch. London Mayor, Sadiq Kahn, has been encouraging the London Taxi Drivers Association and its 20,000 members to do their bit to help clean up the city's air pollution. He announced his ambition to reach 9,000 zero emission capable (ZEC) taxis in London by end of 2020, around 45% of the fleet. However, this target will be missed. As of November 2019, only 3215 electric taxis had been licensed<sup>6</sup> with LEVC announcing that it had produced the 2500<sup>th</sup> TX eCity vehicle on 31<sup>st</sup> July 2019<sup>7</sup> at this production rate, it will take until end of 2023 to produce ten thousand vehicles. Sadiq Kahn must be hoping that the Nissan Dynamo catches on quickly to fill the gap.

Managing a change initiative such as replacing the powertrain and fuel in black taxis requires a holistic view, a system thinking approach. It requires a number of stakeholders to collaborate together on a common goal. The right incentives need to be in place to drive the desired behaviour, and it takes time to get everyone aligned to tweak the parameters of the product and service so that everyone wins.

## The regulatory need for public service

The cab swept past the Houses of Parliament and across Westminster Bridge. David could see the London Eye<sup>8</sup> out of the left window, just along the river. The impressive building in between is the former town

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<sup>4</sup> <https://www.theguardian.com/business/2018/jan/16/flat-fare-dodgy-meter-blocks-rollout-of-londons-electric-cabs>

<sup>5</sup> <https://www.theguardian.com/environment/2019/oct/23/first-100-electric-black-cab-for-120-years-launches-in-london>

<sup>6</sup> <https://www.taxi-point.co.uk/post/the-9-000-zero-emission-capable-taxi-target-is-no-longer-relevant-says-london-mayor>

<sup>7</sup> <https://www.levc.com/corporate/news/2500th-electric-taxi/>

<sup>8</sup> <https://www.londoneye.com/>

hall, now a Marriott hotel. David catches a snippet of news coverage on the radio, which has been playing away in the background.

“Uber are in trouble again, eh?”

“Yes, this has been going on a for a while. Some of their drivers have been refusing to carry the guide dogs for blind people. You see that just isn’t allowed for us. We are classed as a public service. Our license requires us to carry people in wheelchairs, blind, anyone who needs assistance really. It’s part of the job – part of the service. They haven’t been doing that and now they’re in trouble for it.”<sup>9 10 11</sup>

“You know when you take a black cab, it isn’t just the ride you pay for, it’s the full service. That’s how we compete.”

“For example, there was a young girl in the cab last week, left her cell phone, in the back, didn’t she. My next fare found it on the seat. So, at the end of my shift I took it to one of my buddies, he knows how to figure out the number and stuff like that. We managed to get hold of her sister and tell her that we found her sister’s phone in the back of the cab. Turns out she lives near my mum. So, the next day I went to visit my mother for lunch and dropped the phone off. She was so grateful to get it back she was crying. She’ll be happy now she took a black cab – a loyal customer. That’s how we provide superior service. That’s what makes our service special.”

## A Better Class of Service Saves the Day

Almost there!

“Here you are then guv. And just in good time to catch the sunset. Give you a tip, there is a Fast Track ticket. Costs about twelve quid more but ensures you jump the line. Maybe worth it, if you want to catch the last of the sun and really enjoy the view.”

“Thanks for the tip. We’ll do that.” David pays the driver with a ten pound note.

“Just give me two back. Thanks.”

“Well, thank you for the tip! Enjoy your afternoon.”

David spots the Fast Track sign, the tickets are sold in a separate hut. Pay extra to jump the queue? Why is that worth it? Why was it worth taking a taxi rather than the underground? Because the purpose was to watch the sunset over the London skyline, there was a deadline, a fixed time after which the opportunity expired. They’d been lucky the weather had broken, and the skies had cleared. The main queue at the giant Ferris wheel wasn’t long, buying a premium ticket saved only five minutes of queuing time, but it was worth it as his girlfriend got just the perfect photos for her Instagram.

As we’ll see later in Chapter 10, the London Eye offers different classes of service based on urgency and the amount of time someone is prepared to pay to wait for the ride around the big wheel. By doing so,

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<sup>9</sup> <https://www.bbc.com/news/technology-32395883>

<sup>10</sup> <https://www.standard.co.uk/news/london/uber-driver-refused-to-carry-blind-woman-because-she-had-a-guide-dog-a3274516.html>

<sup>11</sup> <https://www.theguardian.com/commentisfree/2017/jun/08/guide-dog-taxis-uber-illegal-drivers>

they make more profits from those with a tight schedule, or a deadline to catch the sunset. Classes of service should be tailored to customer purposes. Using a single class of service, treating all customers homogenously shows a lack of empathy for customers' needs and expectations, and leaves potential profits on the table. Each customer segment, each purpose, should ideally have its own class of service, tuned to the customer expectations. Great customer experience comes from having the perfect service level, the perfect experience of consumption.

There was a marvellous 360-degree view at the top, and the sunset was well worth it, with plenty of drama in the sky as the last of the rain clouds cleared away. However, it was the journey across town and the conversation with the cabbie that provided the best all-round view of what it takes to introduce innovation into a market. Innovations and products and services need to serve the consumer better, but they aren't the only stakeholder, an all-round picture of how the changes affect every stakeholder must be taken into consideration. Fitness for purpose is viewed through many eyes. Striking the right balance to keep everyone happy offers a greater challenge as different stakeholders fitness criteria compete and create conflicting demands.

## Summary

- True fitness-for-purpose involves the expectations of multiple stakeholders.
- Fitness criteria for different stakeholders can introduce conflicting demands on the design, implementation or service delivery of a product or service.
- Regulatory authorities can create requirements in the public interest that adds cost or burden to a service provider, however, the playing field, the cost base, is level so long as everyone plays by the rules.
- When regulations add additional costs that can't easily be passed on to the consumer, government subsidies or tax incentives may be required to encourage the desired behaviour and adoption of a new technology.
- Customer service can go beyond the basic product or service being purchased – it is not just a taxi ride, it's a trusted service with aftercare in the event that something goes wrong.
- Classes of service create opportunity for more profits.
- Classes of service should be tuned to a customer purpose.

## 6: Unicorn Hunting or “Open all hours”

### The Human Condition Drives Patterns of Common Fitness Criteria

We often hear in product management, innovation, and design circles, that innovations address previously unmet, or unfulfilled human needs. Frankly, we find this preposterous. The human condition, what we need, want, how we are wired emotionally, hasn't changed in perhaps 25,000 years. To pick on one of the darlings of 21<sup>st</sup> Century start-ups and innovation, one of the great unicorns, let's ask the question, “Did Facebook fulfil a previously unfulfilled human need?” If you stop to think about this just for a moment, and you know anything of the history and foundation of the business, then you know intuitively that the answer is “No”, Facebook did not fulfil a previously undiscovered, unarticulated human need, rather it provided a more convenient means to answer an age old question that young men and young women have been asking for millennia, “Does that boy/girl already have a girlfriend/boyfriend?”

Because an innovator, entrepreneur, product designer, risk taker harbours the ambition to create and build the next unicorn, billion dollar start-up tends to blind them – because they want to create a unicorn, they believe that they must hunt for a unicorn: that magical, previously undiscovered, unmet, unfulfilled human need. They simply don't. What they seek, is to find an existing human need, and a means, an innovation, that enables that need to be fulfilled more easily. Aldous Huxley wrote, in reference to the modernity of the 20<sup>th</sup> Century that, “Speed, it seems to me, provides the one truly modern pleasure.” In other words, there is almost nothing new when it comes to human beings and the chance that you might discover such a new human need, and develop the innovation that harnesses it, is a once in a century, perhaps a once in a millennia occurrence. For example, could we imagine, a reborn Huxley in the 2030s writing, “Weightlessness, it seems to me, is the one truly modern pleasure” in response to a growing space tourism business? Perhaps!

This chapter describes the commonly recurring product and service fitness criteria: they are almost universal because the nature of our universe and the nature of the human condition don't change in the span of our lifetimes. You can use this model to map the territory, understand your existing features, functions, and processes, and determine where there may be room to innovate, to improve, to make something that your human customer already cares about, just a little bit easier, faster, more affordable, more obtainable.

When Neeta ordered pizza, she cared about the lead time to delivery. She also cared more or less about predictability of delivery. She cared about the quality of the menu and ingredients to varying degrees. She cared about order accuracy, although she had different tolerance levels for mistakes. She cared about tastiness and quality of the pizza and its condition upon delivery. She trusted that the restaurant conformed to health and safety standards in food preparation, and she cared about price in relation to the quality of the pizza she was ordering. She had differing levels of elasticity for pricing levels depending on context. She was less price sensitive when purchasing for the office than she was when purchasing for the children at home. It turns out that these fitness criteria that determine Neeta's selection of restaurant are representative of commonly recurring selection criteria that determine whether a product or service is fit-for-purpose. When you do not have deeper insights into what is driving customer selection, these commonly recurring fitness criteria are a very good place to start.

## The Six Commonly Recurring Fitness Criteria

There are six categories of commonly recurring selection criteria that provide us with measures for determining whether a product or service is fit-for-purpose:

- Affordability (or occasionally just price)
- Convenience
- Lead time and its predictability
- Optionality
- Quality and its predictability
  - Functional
  - Non-functional
- Safety or conformance to regulatory requirements

Let's look at them one by one.<sup>12</sup>

### Affordability

Neeta took the 5:10 train from work, got into her car at the train station's park-and-ride lot, and made a stop at a local running store on her way home. It was time for a new pair of running shoes. She joined a gym and took up running after her youngest was born. Several months and about 1,000 kilometres later, replacing the shoes after some mileage became her regular routine and an injury-preventing tactic.

"There will be a local 5K race in a few weeks," the saleswoman said to Neeta while ringing up her purchase. "I've run it every year for the last five years and had a blast every time. Would you like to register to run it?" The saleswoman was a running enthusiast herself. Neeta had never competed in a road race before. She was not sure what to say. "I'll think about it."

The saleswoman placed a leaflet with the road race information and registration form in Neeta's shopping bag.

Neeta had sticker shock back home when she opened the leaflet. The race registration fee was \$40! It included running the race, measuring her time "officially" with an electronic chip strapped to her ankle, a commemorative T-shirt, and some snacks after the race.

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<sup>12</sup> As a note to the third edition, this list has grown with the addition of optionality and convenience. Somehow, due to the nature of our own business and the focus of our consulting and advisory work in professional services, we were blind to, in hindsight, these two rather obvious additions. In fact, it is somewhat embarrassing as David's main conference series in North America, always picks locations in what are known as "Tier 1 cities" in the hospitality and event planning industry. This choice is made precisely because customers report that ease of access via a major airport is a strong selection criterion. While the conference tours the United States varying location from East Coast to West Coast to facilitate attendees who are limited in their freedom to travel. This is particularly true of public sector employees living and working in the mid-Atlantic region of the East Coast.

It was the (embarrassing) "discovery" of these missing fitness criteria that prompted the release of this third edition and the related third release of the F4P Framework.

“You could run on a sidewalk around the subdivision and time yourself with a stopwatch for free!” said her husband.

Neeta had a feeling there was more to the race experience than the stopwatch timing. She recalled she spent \$40 on pizza tips a couple of weeks ago, so she thought she was not risking much and reluctantly decided to give it a try.

The race day exceeded all of Neeta’s expectations. After finishing the race, she met and chatted with several local running enthusiasts who spoke about their quest for healthier lifestyles and freely shared their challenges and training tips. Some of them had achieved what they never thought was possible and had inspiring stories of how this sport helped them accomplish more in their lives or careers.

Neeta looked at the race as a project manager, maybe for a minute. It was quite a complex event that must not have been easy or cheap to put on. Several police officers providing road safety must have cost something, and at overtime rates, no doubt. The race T-shirt was made of nice “technical” moisture-wicking fabric (could be useful for a run on a hot summer day, she thought). The finish-line “snacks” included tasty and pretty much all-you-can-eat barbecue—and quite a lot of food was needed to feed the hungry runners. There were also many volunteers along the racecourse who had to be there early to help make it a great experience for the runners. They had to be instructed, uniformed, and fed. And what about marketing?

Even the small things like registration leaflets—what would it cost to design and print them?

Neeta realized that even if everybody paid \$40, that might still not be enough to pay for everything. Just at that moment, the race director took the microphone.

“We’d like to thank our generous sponsors, many of whom are local small businesses.” And one of them was . . . Westside Pizza!

Neeta spotted the Westside Pizza tent soon after she caught her breath after crossing the finish line. As the race director spoke, she recalled how different the pizza was from the one she ordered for her kids not long ago. Instead of lukewarm cheese pizza, she had a slice of a bubbling hot pie topped with spicy fajita chicken, bacon, onions, and instead of the usual tomato sauce, this was smothered in a ranch sauce. Delicious! Of course, the kids would not like it. It turned out that Westside Pizza was not a one-trick pony—they knew how to deliver product that would appeal to other customer segments. For the hungry 5K runner this was more than fit-for-purpose. So nice, in fact, she would have to try it again! What other recipes might they have? She would need to check that out.

Neeta realized that none of the 150 or so people at the event was there for a wrong reason. Everybody paid \$40, had a good time, and was likely to come back next year. People who would not appreciate such an experience would surely find the price of \$40 (that did not even cover all the costs) way too high. They would balk at it and not participate in the event. Trying to attract them with deeply discounted prices could make the event bigger, more expensive, more difficult to organize, less attractive to its core customers, and ultimately, unsuccessful, and unsustainable.

She would gladly pay \$40 to run her local 5K road race again, realizing that a \$15 price tag (and the experience that would come with it) would make the product much less attractive, less worth her time and effort. At \$15, she may as well run around her subdivision with a stopwatch and save her money. The

experience at the \$40 race made it worthwhile. Changing the price tag changes the market segmentation! Cheaper is not always better if it comes at the cost of quality (of experience).

### *Elasticity & sub-segmentation*

When we advise our clients on creating products and services that are fit-for-purpose, the price or affordability of products and services often comes up as a potential criterion. In the strategic planning workshops, we run with clients, they often want to list price as a fitness criterion. It is well understood that price has an elasticity to it—there is often a maximum price that consumers are capable or willing to pay for a product or service. If you break that elasticity, then you lose the customer. For them, your product or service is not fit-for-purpose. However, the limit of elasticity is not entirely everything we need to consider. We recommend that you treat affordability as a means to subset and divide a market segment. Segmentation should always be based on customer purpose – both rich and poor can share the same purpose, but they don't have the same means, and hence, they appear in different affordability sub-segments.

The following quotation is taken from David's interview with Alan Cooper, which appears in Chapter 13,

*The example I use is the guy who works on the assembly line at the automotive plant in Haywood, California. He is a working-class guy, likes to watch TV and drink beer, on the weekend he gets in his pickup truck and he goes up to the Sierra Nevada and goes out into his favourite trout fishing stream and stands there in his waders and does a little fly fishing.*

*Then there is the executive, who is Chairman of the Board of the automotive plant. He eats at a fancy French restaurant. He makes a lot of money. He drives a Mercedes Benz off-road vehicle. On the weekends, he too likes to get away from it all. So, he drives up to the Sierra Nevada and wades out into the same stream in his really expensive Orbis Hip Waders and uses his 300-dollar fishing rod and he stands not 50 feet away from the other guy who works for him on the assembly line. Both trying to catch a trout.*

*From a demographic point of view, there is no two more different guys. Now, if you own [www.flyfishing.com](http://www.flyfishing.com) then these guys are your market.*

What we see here is a description of two people who share the same purpose, the same goal, but have hugely different economic means. From a functionality perspective, they look for the same things, but from a quality (non-functional) perspective, the wealthy executive can afford to replace his equipment more often and to buy higher quality, more robust products in the first place. While the thrifty assembly line worker may pick up used items at the big bosses' garage sale, in order to equip his growing son and pass on the bug for fly-fishing to the next generation of the family.

Our recommendation is not to treat affordability as a KPI or specific price as a fitness criterion in its own right. Instead consider:

1. Traditional socio-economic segmentation and ask, "do customers in these different groups share this same purpose?"

2. For each sub-segment do these different socio-economic groups have similar or different expectations (fitness criteria)? For example, life-expectancy of the product, or functional or non-functional quality of the product, such as its durability?
3. Can you create a 2-dimension grid by purpose and affordability and define the fitness criteria for each cell in the grid? (as shown in Table 6.1)
4. Given the understanding the (absolute) price enables profitability, and signals quality, you may not wish to reduce the price, but can you find alternative means to enable affordability for each sub-segment?

The example from Neeta's race, that, "what if the price was only \$15 rather than \$40?" isn't the same as point number 4 above. Reducing the price of the race, changes the nature of the event, by opening up new segments with new customer purposes. Hence, in your grid of purposes, versus socio-economic sub-segments, a new lower price point, might add a new purpose column to the table. This new segment may or may not be a desirable market segment. As we point out, Neeta believes that a cheaper race, with more people running, would lower the value – the diversity of purposes would weaken the social cohesion and camaraderie of the event. As we will see in chapter 9, price can be used as a means to discourage unwanted segments.

Purpose/Socio-economics	Fly-fishing meditation	as Fly-fishing for the table	Competition sportsman/woman
Wealthy Retired			
Middle-aged Professionals			
Young professionals			
Students			
Teenagers			

Table 6.0 Example of a Purpose by Socio-economic matrix

This begins to sound like old-fashioned socioeconomic class segmentation, but it is not. It is not simply about how much disposable income people have available. Price affects the cost and cost affects quality. In table 6.0 you would elaborate each cell in the table with the fitness criteria and then determine whether the segment was viable, from a cost and benefit perspective.

At lower price points, we might expect non-functional quality to be fragile. The product was cheap but if it breaks, it has to be thrown away. The product may lack robustness and is made from flimsy, inexpensive materials, and it is highly likely to break. The question for the consumer is whether or not it will break within a reasonable life expectancy. How often do you replace your sunglasses?

At mid-range price points, a consumer might expect that, in the event that product breaks that it can be repaired or replaced, that its life can be extended through maintenance, that the product is serviceable. For example, the owner of a TAG Heuer watch may expect to return it to the dealer periodically to have it serviced and may find that they extend the life of the watch for several decades by doing so.

At high price points, a product may be very robust, almost indestructible. As we will see later in this chapter with the example of Vertu, the materials used may be of the highest quality and intended to be indestructible. If the product is likely to outlive its owner, then part of their purpose in purchasing it is to create a family heirloom: consider the marketing of the watchmaker Patek Philippe, "You never actually

own a Patek Philippe. You merely look after it for the next generation.”<sup>13</sup> Or the purpose may be that the buyer is looking for the ultimate in reliability, that the product must never let them down. This may be true in extreme life-critical situations, consider for example, scientists and explorers in the Antarctic who spend their lives collecting data on global warming and ice melt. They need equipment that never fails them even in extreme conditions.

Quality measures are fitness criteria and affect selection. So, price often is not the fitness criterion at all, instead it is quality, but the quality must be delivered within the affordability range of the consumer’s economic elasticity. For example, we may be willing to pay more for faster delivery because time has a value due to the cost of delay, or because there is value in deferring commitment. If we can afford to pay more to avoid a cost-of-delay impact, then we will gladly pay.

There are levers at our disposal to open up sub-segments at different affordability points. These are:

- Purchase
- Incentives & Regulations (usually tax related)
- Finance
- Lease
- Subscription
- Sharing

Let’s look at each of these in turn.

#### Purchase

Purchase assumes that the customer has the capital and liquidity to pay the asking price. They either do, or they don’t, with the marginal case, that they do have the money, but it competes on the margin against other demands.

#### Tax Incentives and Regulations

As we saw in the previous chapter, London cabbies are being incentivized to trade up to a new electric powered taxi with a tax incentive. The government is willing to cover ~50% of the additional purchase price, in order to soften the impact of the financial burden of paying for a new vehicle. From time to time, governments run similar schemes, to encourage vehicle upgrades and create demand for the auto-industry. Famously, during the Barack Obama presidency in the United States, the Car Allowance Rebate Scheme (CARS) colloquially known as “cash for clunkers” incentivized Americans to replace older, inefficient, and polluting vehicles with new ones.<sup>14</sup>

It is common to find that planning permission for new homes in expensive cities or in-demand tourist or retirement destinations, come with some conditions: some of the properties may be reserved for “local people, on lower incomes” and the ability to purchase is means tested. Such programs are intended to improve the socio-economic diversity of the neighbourhood, enabling for example, teachers to live close to the school where they actually teach, and hence, to live amongst the children they are teaching.

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<sup>13</sup> <https://www.highsnobiety.com/p/patek-philippe-good-advertising-or-bad-advertising/>

<sup>14</sup> [https://en.wikipedia.org/wiki/Car\\_Allowance\\_Rebate\\_System](https://en.wikipedia.org/wiki/Car_Allowance_Rebate_System)

## Finance

As David's taxi driver explained in the previous chapter, sometimes the capital isn't available, but cash flow exists to provide the liquidity to finance a purchase and pay for it over a period of years. Financing improves affordability, even though the price ultimately paid is far higher than the original asking price. Financing still requires some capital investment, some down-payment such as 20% of the total price. Access to financing requires credit worthiness. This is evaluated in different ways in different countries around the world but is generally limited to people who show steady income, and prudence with their expenditure. The outcome of financing is that the purchaser owns the product they have financed at the end of the term of the loan.

## Lease

When less capital than it would take to make a down-payment is available, leasing becomes an option. On a monthly basis, leasing is usually cheaper than financing, but the consumer never owns the product and must return it to the owner at the end of the term. Ultimately, leasing is a more expensive means to have the utility of a product, but it lowers the bar to customers with less capital for the initial payment.

## Subscription (or rental)

Subscription or rental lowers the bar even more. For those with no capital, and no credit rating, renting may be one the only viable option. For immigrant workers and young people with little credit history and lower incomes, long term car rental supported by the manufacturer has become commonplace in many markets. More expensive per month than leasing, but without the requirement for any initial capital or an established credit history in that country or market.

Subscription for services is actually very common and may come with several affordability price points. Take for example, fitness centres and gyms: they might offer a monthly subscription or an annual subscription. The annual rate often comes at a discount – essentially for paying up to twelve months in advance and providing much needed cashflow to the business, the consumer gets a discount. Wealthier consumers are more likely to pay the annual subscription and save money, while less financially liquid users will prefer the pay-as-you-go monthly subscription.

In this example, there is an interesting psychological effect: people who pay monthly for gym membership are more likely to keep renewing their subscription, because paying monthly, encourages them to go and get value for their money. Meanwhile, annual members, often fall off attending and fail to use the membership. When it comes up for renewal, they realize that they haven't been making use of it and instead drop out. Perversely, gyms should incentivize monthly payment if they want to preserve and grow their subscribers and reduce churn. However, the business need for cashflow, may require them to continue to incentivize annual subscriptions, particularly at seasonal times of year when they need cash.

## Sharing

Pretty much all young people are familiar with the concept of sharing an apartment, because even the cost of renting a single property is beyond their means. Sharing works well for products and services that aren't used very often. One of David's colleagues own a sailing yacht which he shares with a lifelong friend.

David has worked for bosses who have had part ownership of small aircraft. In such cases, the owners share the purchase cost, the maintenance, and the storage, at a marina, or an airfield.

In recent years, the combination of sharing and subscription has become common with ride-sharing, vehicle sharing, bicycle, e-bike and scooter sharing becoming common across many big cities around the world. Such schemes have been enabled by the ubiquity of GPS tracking, Bluetooth radio, and mobile applications. The common element is that people use these products and services relatively seldom, perhaps every day, to and from work, but only for a short time-period. They don't feel the need to invest the capital in acquiring their own model, nor perhaps do they have the space to store a scooter, a bike, a car, a boat, or an aircraft. NetJets and Lime are not so fundamentally different businesses!

### *Enabling Affordability*

For each cell in your table of market sub-segmentation, Purpose versus socio-economic means, you should seek to establish the criteria for affordability. Is this a market where people will purchase the product? Would they purchase with some incentives, and if so, what would it take to put those in place? Would they purchase if financing were available, and again, what would it take to make that facility available at the point of purchase?

If ownership is unlikely, how much can they afford on a monthly basis, and how much capital might they have available initially? How much cash flow do they have for leasing, renting, subscription or sharing?

### *Occasionally it is just price that matters*

As we wrote the first edition, it was announced that high-end mobile phone manufacturer Vertu has entered receivership and was closing. Vertu was started by Nokia in the late 1990s. It sold high-end mobile devices costing upwards of \$10,000—and one that cost as much as \$40,000. These devices, in recent times, offered no more functionality than a standard Android smartphone, while older models were based on earlier Nokia Symbian technology. What “purpose” does a buyer have in spending ten to thirty times more for a device with no additional functional capability? The answer is that such a device signals something about them, about their identity, their wealth, their values, and what they need to elevate their own self-esteem. The purpose and the price go hand in hand. What is important is the relative difference in price to regular smartphones, not the absolute price being asked, though there will be some elasticity in pricing. A Vertu buyer wanted to signal that they are richer than someone else. They had a deep identity-related emotional motivation. They wanted to signal wealth, perhaps because it signals success. Traditionally we associate this type of behaviour with nouveau riche (or “new money”). For this segment, price does not have a threshold, it has a multiplier, within some bounds of elasticity.

Vertu was displaced in the market by cheaper alternatives—after-market bling accessories. Vertu was making phones integrating OEM components from other consumer brand manufacturers but replacing the screens with ones made from sapphire and the plastic enclosures with those made from precious metals and encrusted with diamonds. The customers' purpose, however, was to signal wealth, ostentatiousness, spendthrift consumption. From more than a few feet away, it was impossible to tell an Android phone with a jewel-encrusted cover from a genuine Vertu. In addition, it took Vertu time to bring new devices to market. They were often working as a customer of original equipment manufacturers, one or two models behind the current state of the art. Hence, you could have the latest Samsung Android

phone with after-market bling costing perhaps \$3,500 or you could have a Vertu based on last year's model costing \$10,000. For the segment that wants to signal wealth, that want the flashiness of the bling-encrusted phone, the non-functional quality of a craft-designed Vertu with an indestructible sapphire screen is unnecessary. They do not want, nor do they have the time or opportunity, to tell people, "No, seriously, this is a genuine Vertu, not just a jewel-laden cover for my Samsung." Vertu was the Rolls Royce of the mobile phone market, but a Vertu did not look different from an imitation. So, the same benefits an owner of a Rolls Royce might enjoy were not so readily communicated with a Vertu. Vertu needed buyers who sought to be discreet about their wealth—old money buyers—and to narrow the segment, old money buyers who didn't mind having a phone that was a model year or two behind the state of the art. There simply were not enough customers in Vertu's segment to sustain the design and manufacture of their phones. Vertu might have found a niche for the indestructible robust non-functional quality of its sapphire screens, but again, how big was that segment, could they afford the price, and would there be enough of them to create an economy of scale? Vertu may have been fit-for-purpose for a small audience, but the business was not viable because sufficient economy of scale was unachievable. What might it have taken to sustain Vertu? A price rise of perhaps five-fold, taking a \$10,000 device to \$50,000 when a comparison product might be a Samsung phone with an aftermarket cover costing \$3,500? Presumably, the company's owners decided it was too risky to experiment with finding a suitable price, and a product offering that appealed to new segments that could pay that price. Unable to find and sustain a market segment big enough to support it economically, Vertu closed.

Fit-for-purpose is one thing, but when alternatives compete in the market, the fittest survive. For the segment that wanted to show off their wealth, Vertu competed with after-market alternatives. After-market bling displaced Vertu as fitter for the environment, and Vertu, as a consequence, became extinct. Vertu's identity as a phone manufacturer and originally a spin-off from Nokia meant they were unable to reinvent themselves as a luxury after-market cover supplier. David will examine identity-related failures such as Vertu in the third book of this trilogy, *First Who, Then Why*.

So, price isn't an independent variable. Price varies according to the performance against other fitness criteria. Vertu was unable to achieve superior performance against after-market competitors for most of its customers' fitness criteria. As a consequence, the customers selected the alternatives that gave them everything they needed at a lower price. The sapphire screens and their indestructible, non-functional quality were not part of the customers' fitness criteria. Vertu overserved the market on robustness of their displays and made themselves uncompetitive on price.

Segment the market by purpose and sub-segmenting by socio-economic means and determining the mechanism to achieve affordability in that segment, will enable you to make actionable decisions about the value of the sub-segment and its viability.

## Convenience

"Open all hours"<sup>15</sup> is a famous BBC comedy show which ran for only 26 episodes between 1976 and 1985, starring British comedian, and national treasure Ronnie Barker<sup>16</sup>. The convenience of the corner shop, perhaps now displaced in many countries with the gas station, open from early in the morning until late at night, for essential, spontaneous, and last minutes purchases, is something that all of us regardless of

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<sup>15</sup> [https://en.wikipedia.org/wiki/Open\\_All\\_Hours](https://en.wikipedia.org/wiki/Open_All_Hours)

<sup>16</sup> [https://en.wikipedia.org/wiki/Ronnie\\_Barker](https://en.wikipedia.org/wiki/Ronnie_Barker)

where we live can understand. You don't pay the best and lowest price, like in the big supermarket, but you can walk there, while the potatoes are boiling and buy the butter you forget to purchase during the weekly household shopping trip to the hypermarket.

We value convenience!

In an example like Arkwright's, the corner shop, in the BBC series, we value the long opening hours, and the geographic location. We value being able to walk there, whenever we need to. Arkwright (Ronnie Barker) makes his livelihood from convenience. He pays a price for this. His shop assistant, Granville, played by famous British TV actor, David Jason, constantly complains that the long hours affect his social life.

Written in the 1970s, "Open all hours" reflects the race for survival of the small corner shop against the growth of the supermarket, and a population growing wealthy enough to afford a car, and the ability to purchase groceries at larger scale and transport them home using their vehicle. Greater convenience was the retaliatory weapon against the capital and scale of the supermarket chains. "Open all hours" is the classic tale of the underdog, resilient to the core, who refuses to say die. Arkwright's character is written with a stammer, a handicap, as a metaphor for the challenge of staving off the onslaught of the future.

We will always value temporal convenience, and geographic convenience. These are core to the human condition. If you can make something easier to access geographically, or temporally then you have an advantage.

We also value communication convenience. In the 1990s, telephone banking and telephone insurance became big businesses, call centers sprouted around the world and created a whole new industry. Considerable wealth was created, for example, Royal Bank of Scotland, pioneered the telephone car insurance industry with Direct Line founded in the United Kingdom in 1985. A combination of the convenience of buying insurance over the phone, coupled to ruthless data analysis to cherry pick the low risk clients in the market, foreshadowing businesses like CapitalOne in the United States, which does a similar thing with credit cards, was to generate billions of pounds of wealth and shareholder value.

Doing business by phone, can be easier and more convenient than visiting a branch. Doing business on the internet from the convenience of your home office desk and the browser on your PC, can be easier than waiting in the queue for your call to be answered. Doing business from your mobile phone, via an online banking app, can be even simpler. After moving to Spain in 2018, David paid for his car, while sitting across the desk from the dealer, by making a funds transfer from his iPhone.

Whenever you can make it easier and more convenient to do business with your customers, more potential buyers will value that convenience and select you. Improve convenience to give yourself a competitive advantage.

### Lead Time and Its Predictability

Lead time is the time from accepting a customer order until delivery, for example, the time from when Neeta placed her pizza order until it was delivered to her doorstep. In some contexts, lead time is called time-to-market, meaning the time from when we decided to do something until it was ready for launch. Lead time is almost a universal, ubiquitous criterion in product or service selection. It matters in many different businesses, whether they are a tangible goods (physical) business or an intangible goods

(professional services) one. Why? Customers' purpose, whatever that might be, is very often linked to their timeline and the impact of other events or lost opportunity over time. This is sometimes called the "cost of delay." For Neeta, cost of delay may have resulted in temper tantrums and emotional behavior from her younger children, so at the very least, delay in delivering her pizza for the children on Friday evening would have driven up her stress levels.

If a product is delivered way too early, the customers may not appreciate it or have any use for it. A marketing campaign for a Valentine's Day promotion that is ready to launch in November has no value until after New Year's. On the other hand, if our business delivered a product to our customers way too late, the customers' purpose, and their need or use for our product, may have already expired. If our Valentine's Day promotion wasn't ready until early February there may be little point in announcing it, because our customers will have already made a purchasing decision or simply won't have enough time to see and react to our promotion. The customers, in this case the marketing department, waiting for our internal ad agency and content marketing team to deliver the campaign can't—and won't—wait forever. In general, if our delivery is too late, customers may have given up on our product or service, bought it from our competitors, or found alternative ways to satisfy their needs. In a corporate setting, this may result in pressure to outsource to a vendor rather than rely on an unpredictable internal service that isn't fit-for-purpose.

Not too early and not too late! Therefore, every product or service has a time window when the customer's purpose for choosing it (preferably from us rather than our competitors) has both validity and value. Depending on what business we are in, such time windows may vary widely in duration as well as how far into the future they are. For example, David has worked with Olympic Broadcasting Services (OBS) and their Olympic Channel TV service. A business such as this is constantly driven by the dates of the events they service and cover, and often windows of opportunity are short and the consequences of late or unpredictable delivery are severe. Alexei has worked with a biotech company, some of whose products are generic drugs. The whole industry knows the expiration dates of patents on various original drugs. The companies developing generic drugs race against the clock to bring their products to market near the date they all know many years in advance. Those arriving on time divide the market, others find very little market share left. Not every business is like this, however. The consequences of a delay in Microsoft's release of the latest version of Windows or of their Office suite products is relatively minor because of their monopoly position and customer lock-in. The high cost of switching means that cost of delay is relatively low and the need for predictability is mostly psychological rather than economic. However, no matter what business we are in, it's important to have a delivery capability with understandable, measurable lead time. Without an understanding of our delivery capability, we may not be able to continue taking customers' orders with any confidence that we can deliver within their expectations or acceptability thresholds. Lead time is such a universal fitness criterion that every business should be measuring it.

As a metric with which to manage our business, lead time is not a single number. There are several components to it. Let's examine them using Neeta's commute as an example.

Neeta considered commuting by train, bus, or car. One of the commuter train lines runs through her suburb, the nearest station only a few minutes' drive from her house. Her office also is only a few blocks from the downtown train station. The train ride is forty minutes, with trains departing every ten minutes during the rush hour. Even if Neeta somehow were to miss a train, she would simply take the next train

ten minutes later. The total trip time would be about one hour. Not ideal, but still a pretty good deal in a big, growing city. What is better, though, is that the travel delays, should they occur, would be short and controllable. The train service has high predictability! Trains can be busy in peak times, but the smoothness of the ride should allow her to do some reading, email, or even more serious work. It is a relatively low-stress option.

Neeta eliminated the bus commuting option quickly. The best she could find was a combination of several bus lines with a total one-way travel time of two and a half hours. A bus might be fine for a short trip within town, but for a commute across municipal boundaries it is not at all fit-for-purpose. Neeta thought about driving to the office. The route, a combination of expressway and city streets, would take her about forty-five minutes in the best case. But what if there was a jam on the expressway or one of the streets was closed for construction? Then the trip time could exceed an hour, or even, on a bad day, an hour, and a half. What if Neeta had an important meeting at nine o'clock in the morning? How early would she have to leave her house? As a train commuter, she could take an earlier train to be on the safe side, but with the car, no early hour seemed early enough! And if there were tie-ups at the end of the day, Neeta worried about having to pay the sitter extra to watch the kids after school or being late for an evening soccer practice. These represented tangible impacts of a delay. The car is faster in the best case, but it is not predictable. This lack of predictability in traffic conditions means that sometimes Neeta would either have to compensate by leaving work early or accept that she'd have to pay extra for babysitting—and that in some cases her kids wouldn't get to soccer practice on time. Driving is also stressful. She has to drive, pay attention to traffic, and if she were to multitask, at best it would be a hands-free conference call or listening to an audio book or a podcast. Neeta considered the potential penalties of driving to work unacceptable and hence, she chose the train, of course. She believed it to be more reliable, and she trusted it more than she did the uncertainty of driving. Considering Neeta's choice analytically, both transportation modes are fast enough for her in the average case, but the train has greater predictability. If we measure its predictability by variation in trip time, it is within ten or fifteen minutes. This amount of variation, not the travel time itself, was Neeta's fitness criterion and the satisfaction threshold that she used intuitively when choosing her transportation mode. The city planners most probably understood it—that is why they designed the train service!

The Table 6.1 shows the summary of lead time and predictability for Neeta's commute options.

**Table 6.1** Comparison of commute times

Commute Options and Times			
Criterion	Car	Train	Fitness
Best case	45 minutes	55 minutes	Satisfactory. Both transportation modes are fit enough.
Typical or average case	60–65 minutes	60 minutes	
Worst case	90–120 minutes	70 minutes	The train service is fitter. The car's variation in travel time—its worst-case travel time—exceeds her fitness threshold.
Variation: the worst-case delay using the best-case scenario as a baseline	45–75 minutes	15 minutes	

This comparison shows us that we need to consider at least two criteria related to lead time: (1) the duration of time in the average, or typical, case; (2) the variability of time, measured not by typical or average cases, but by those closer to the best and the worst cases. We need the average time and the range from shortest to longest. In other words, ask not one question about time, but two: how fast? and how predictable? Customers may care sometimes for one, sometimes for the other, or sometimes both.

Companies in regulated industries and businesses with short windows of opportunity for a given market may find another time-related criterion useful: timeliness. In what percentage of opportunities did they hit their regulatory deadlines and dates just prior to short market time windows? Being more reliable at hitting them often requires measuring and understanding lead time, both its average and its predictability.

A more sophisticated quantitative understanding of this may be necessary in higher risk businesses or in regulated environments. The use of probability distribution functions (PDFs) for lead time, often constructed as histograms of historical lead time occurrences, is recommended but we have chosen to spare our readers from quantitative mathematics and statistical analysis in this book.

### Optionality

Optionality is term that can be interpreted to mean how constrained or unconstrained something is. To have optionality is to be with fewer constraints. To be without optionality is to be constrained.

Particularly for products, rather than services, and particularly for more expensive products that buyers will view as investment, optionality is important. Optionality means that a product has the capability to be reconfigured, adapted, or customized to serve more than one purpose.

When you buy a car, your primary reason for purchase may be commuting to work. However, you also want the vehicle for shopping and domestic purposes. You may wish to use it for vacations. You may use it to transport the kids' soccer team (or part thereof) to the match. You may use it for leisure and entertainment. People own cars for a multitude of reasons. The more purposes the vehicle may need to serve then the more adaptable its design may need to be. This is particularly true in regions of the world

where storage space for vehicles is at a premium and households prefer to have just one vehicle, unlike, much of the United States, where families often acquire a small fleet of vehicles for different purposes.

Optionality can take different forms:

- Customizability
- Reconfigurability
- Postponement

Let's examine these in turn.

### *Customizability*

BMW's Mini brand prides itself on customizability. They take the credit, largely, for inventing the concept of mass customization.<sup>17</sup> Recognizing the self-actualizing, individualism of a growing segment of the population, Mini, emphasized the ability of their product to be customized to fit your personality, lifestyle, or identity. As well as offering many features that made a hat tip to the origins of the brand in the swinging 1960s of London.

The ability to tune a product uniquely to the customer's taste and preferences, is compelling. Individuality can be a fitness criterion.

Customization can be at the point of manufacture, the point of sale or the point of use. This concept is known as deferment or postponement – how long can you postpone a decision before commitment. Mini Coopers are largely customized at the point of manufacture. While this is good, it allows someone to design a car to fit their personality, and their identity, it does not allow them to adapt the vehicle to their mood, the season, today's weather, or their choice of outfit.

Postponement to the point of sale, where customization is done at a dealer or retailer, offers little additional advantage for the buyer, other than almost instant availability. A custom ordered Mini might take 4 months to be delivered. On the other hand, a 3G feature phone in 2003, customized with apps and services at the point of sale, is available instantly after the purchase and usable as the consumer walks out of the store. Postponement to point of sale largely creates an advantage for the manufacturer, a greater economy of scale. What BMW achieved with Mini was to make customization economical at a scale of one unit – for example, buyers could use an online browser-based application to design the roof of their Mini, and BMW would custom print that transfer specially for their car. They had developed the capability to customize individual units on the assembly line. This is an example where implementation and manufacturing processes can be leveraged to create an advantage, to raise customer expectations, isolate and defend specific market segments.

Postponement to the point of use, enables customization that fits mood, weather, and choice of outfit. Again, in the 3G era of mobile phones, Nokia devices could have their plastic enclosures replaced. This enabled an owner to have several cases for the phone in different colours, styles, or designs. The look of the phone could be selected every morning to match the owner's outfit and style for the day. Today, a similar effect can be achieved with a protective casing for a smartphone: fashion brands have started to

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<sup>17</sup> <https://sloanreview.mit.edu/article/cracking-the-code-of-mass-customization/>

sell their own smartphone cases, intended specifically to match clothing and accessories sold by the fashion house and worn by the user.

The ability to adapt or modify a product over time so that it might serve multiple purposes can be important, especially if the purchase is expensive. Consider a young man, recently graduated, with a good and secure professional job, who considers the purchase of a new car for the first time in his life. He wants a car that is fun and youthful, and attractive to prospective girlfriends. It's a car to use for fun and recreation as well as commuting and domestic chores. In order to afford this new compact, pocket rocket or passion and virility, he takes out a seven-year loan. The car features folding rear seats, a hatchback, and enough storage for trips to the DIY store, and the furniture store. It is equipped with child safety seat anchors, and it has good enough gas mileage to be considered a sensible and thrifty choice, even if it can be driven hard. The sliding glass roof makes it ideal for the summer, but the sliding blind also make it ideal for protecting young passengers for the heat of the summer sun. Then there are the roof bars, that facilitate a roof box for those trips to the mountains in winter, and the option to add a towing hitch and bicycle rack on the back for those couple (and later family) weekends to the countryside. When a commitment is long, and the future contains uncertainty, then optionality hedges that risk. A 2-seater sports car might be sexy, but over seven years, a 5-door compact hatchback with folding rear seats and lots of passenger comfort options, is much more sensible.

When customers have multiple purposes, or when their purpose for using your product might change over the lifetime of their ownership, then adaptability, reconfigurability, and extendibility matter.

### Quality and Its Predictability

Some of our readers may be familiar with the art and science of defining specifications for products. If your professional background includes product management, business analysis, or system analysis, you are familiar with the terms used below and do not need them explained to you. For the rest of our readers, the terms "functional quality" and "non-functional quality" may seem strange and alien. These arcane terms are often criticized, but in perhaps fifty years no one seems to have improved upon them, so first, a brief explanation with a few examples to help you comprehend the confusing difference between functional and non-functional quality.

If the product is an electric car, the key part of its functional quality is that it has a rechargeable battery powering its electric engines. The non-functional quality includes the range, that is, how far you can drive on the fully charged battery, and the battery recharge time.

If the product is a car of any kind, part of its functional quality is that it has a steering wheel made precisely to the specification, for example, with diameter of eighteen inches. The non-functional quality of the steering wheel is how it is made or implemented, its sub-stance or feel—vinyl covered, leather covered, wooden, and so on.

If our product is a diamond, its functional quality is the size and weight in carats. The non-functional quality is the colour and clarity of the diamond, how bright and sparkling it is.

If our product is music, the functional quality may include playing a tune on the violin with every note at the correct pitch, at the right time, of the right length, and with the bowing technique indicated by the

composer. The non-functional quality is how the violin sounds—the acoustics, the dynamics, and timbre of the instrument—how beautiful it sounds as it is played.

If the product is an online social network, the functional quality includes features to help you find and add friends, make posts visible to your friends, and see their reactions. The non-functional quality may be how many concurrent users it can support, whether the network is reliable 24/7, and so on.

If our service is an online trading system, the functional quality includes executing market and limit orders. The non-functional quality includes low latency of the market information available to the trader and the speed of order execution.

If our service is testing samples of biological material for presence of various chemicals, the functional quality is whether we can detect a particular chemical. The non-functional quality is the smallest quantity or concentration of this chemical we can detect.

This problem of functional versus non-functional quality is echoed in almost all business problems—the “how well” is often harder than the “what.”

Consider how much the demand for electric cars increased when their range increased from 50 to 100 kilometres to 400 kilometres. Or when it became possible to supercharge the car battery in a little more than an hour instead of overnight. A social network that can support a billion daily users is much more valuable than the one capable of supporting “only” fifty million monthly visitors. It is also more valuable if it gives you reliable 24/7 access instead of daily “fail whales.” Diamond per-carat prices vary more greatly based on the clarity and colour than on the size of the diamond.

Or consider selection of orchestra musicians based on the quality of their playing. For musicians, such as Alexei in his younger years, or David’s younger daughter, functional quality is a core selection criteria. If you can’t play at the technical difficulty level required by the orchestra’s repertoire, you simply aren’t selected for the orchestra at all. The quality of your playing—the lightness of your hands and the timbre of your bowing—determine your seating position. The better your non-functional quality, the closer you sit to the conductor.<sup>18</sup> David’s elder daughter recently started playing several Chopin nocturnes on the piano after ten years of practicing the instrument. She could have attempted these pieces five years earlier, however, as she tells her father, “Chopin has to be played beautifully.” It takes many years of developing the fingertip feel to master the dynamics of playing Chopin. Chopin’s compositions are, in business analysis terms, highly challenging in non-functional quality, whereas the functional nature of them is relatively straightforward. To translate this into business analysis terms, the difference between non-functional and functional quality of performing Chopin’s compositions is quite significant. It was equal to, in this case, five years and thousands of hours of deliberate practice by a dedicated young pianist. In summary, the concept of functional versus non-functional quality is this: functional is the “what”; non-functional describes “how well” the “what” is implemented. In some domains, such as music, the word “fidelity” is used to describe non-functional quality. In some analysis literature, elements of non-functional quality are referred to as “the -ilities”—that is, predictability, reliability, durability, and so forth.

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<sup>18</sup> 50. Prestigious professional symphony orchestras may have more qualified candidates wanting to play than the seats in the orchestra. The orchestra conductor can then turn to non-functional criteria for selection.

## *Non-Functional Quality*

We might consider a Rolls Royce a quality automobile, but the functionality it offers has no greater utility than a much cheaper vehicle. We could find an alternative car that carries the same number of passengers and luggage and has similar speed and performance capabilities. It isn't difficult to find similar vehicles with the same number of doors, seats, windows, steering wheels, gears in the gearbox, and so on. We perceive a Rolls Royce as having high quality because its quality is non-functional—the substance of the vehicle is substantial, and the craftsmanship exceptional. Perhaps we like the real wood trim in the interior with its finely polished grains. A cheaper vehicle might feature a fake plastic alternative. We would consider that finely polished wood trim has greater non-functional quality than a cheaper, manufactured, printed, plastic alternative. Non-functional quality is a term that refers to the substance, durability, finish, reliability, solid-ness, weight, and so on.

Neeta has a tolerance for the condition of her pizza on delivery. She has expectations for what “normal” looks like from each restaurant, or perhaps as a convention or standard in the industry or across Toronto as a metropolitan area. She has expectations for how hot and tasty it is and how fresh the ingredients are. She also has a tolerance for how these might vary from her expectations. If the pizza arrived badly burned, for example, this would be unacceptable and would put her off ordering from that restaurant again.

Recently, David has stopped eating lunch at a Thai restaurant close to his office in Seattle. The problem is the variability in the spiciness of their food. David has previously lived in Asia and is used to eating spicy food, particularly chili-spiced Malaysian/Indonesian food and Indian-spiced food. However, there were days when the three-star (out of five, indicating spiciness) Pad Kee Mao at this restaurant left him in tears, mouth burning, and unable to finish half the dish. On other occasions, it seemed like they had forgotten to spice the dish at all. The restaurant has an open kitchen and therefore total transparency. David tried to correlate spice levels to which member of staff was cooking that day but was unable to do so. It appeared to be completely random. The restaurant was not fit-for-purpose: David couldn't rely on having a tasty and filling lunch and then being able to return to work in a healthy condition for the afternoon.

The recipe for Pad Kee Mao tells us “what” it is and gives us the functional specification; the quality of the ingredients, the preparation, and the cooking define how tasty it is and give us the non-functional quality. Regardless of non-functional quality, it would still be a Pad Kee Mao if the recipe was followed. Whether we find it an acceptable Pad Kee Mao depends on the implementation by the chef and the capability of the restaurant. Non-functional quality—and its predictability—are key fitness criteria in selection and in our willingness to pay a quoted price. For exceptionally high (non-functional) quality Pad Kee Mao we would pay a premium.

## *Functional Quality*

Functional quality refers to specification accuracy. If Neeta ordered a cheese pizza, was it a cheese pizza that arrived, or a pepperoni? If it was a pepperoni, we had a failure in order accuracy—a failure in functional quality. If David ordered a Pad Kee Mao and a Pad Thai arrived, we'd have had a similar failure in functional quality. If an ingredient such as garlic was missing from the finished dish, then the recipe for Pad Kee Mao has not been followed accurately and we have a minor failure in functional quality.

Variability, or the predictability in functional quality, is a matter of degree of variation from specification. Garlic missing is a minor variation; Pad Thai rather than Pad Kee Mao is a major variation.

As we saw with Neeta, tolerance for failures in functional quality differed depending on whether she was ordering pizza for the office or for her children. This tolerance to variation is what we call predict-ability. How often, as a percentage, does the pizza restaurant deliver exactly what was ordered? And when they don't, how badly do they get it wrong? Neeta has a threshold for both frequency of mistakes and the magnitude of the mistake. Functional quality and predictability are a fitness criterion for Neeta. It has two components: the frequency of a mistake and the magnitude of a mistake. When ordering for her "ten-pizza team" at the office, mistakes could happen frequently so long as they are small, such as a pepperoni being mistaken for a ham and pineapple. However, a larger mistake—for example, no vegetarian pizzas were delivered—would be unacceptable. Neeta's tolerance for the impact of an error would have been exceeded.

### Safety and Regulatory Conformance

Neeta cares whether her food is prepared in accordance with health and safety standards for food preparation. She lives in a developed country and she trusts in the systems of local government in the province of Ontario and the cities of Toronto and Mississauga. So, she doesn't need to verify safety and conformance. However, if Neeta heard some rumours about health and safety standards being violated, or saw a local news report that a branch of Westside Pizza had been closed by an inspector for code violations, it might cause her to think twice about doing business with them.

On the other hand, does Neeta care whether her pizza delivery boy broke any traffic laws when delivering her pizza? Although she probably should, the reality is that she doesn't. In the highly unlikely event that the pizza boy or others were killed in an accident as a result of reckless endangerment in the speedy delivery of pizza, maybe she would feel some guilt. What if she'd offered a bigger tip in exchange for faster delivery and this had led to recklessness? We think everyone can understand this, but really it is a strawman—it is speculative. The reality is that Neeta cares about the quality of the pizza upon delivery and not whether traffic laws were broken. It may be necessary to drive carefully to ensure quality. Neeta's tipping based on quality on delivery rather than on aggressive speed of delivery may drive the best behaviour.

If there is a lesson here, it is that consumers adopt safety and regulatory requirements as fitness criteria when it affects their consumption of the product. When the regulations relate to an aspect of the service that they don't consume and view as an overhead, or non-value-added aspect of the product implementation or service delivery, the regulations won't be a fitness criterion for them. It is the role of lawmakers and regulatory authorities to make these fitness criteria in order to protect others—to protect third parties not directly involved in producing, delivering, or consuming the product or service.

### Regulated Industries

In regulated industries, meeting the regulations is table stakes for entering the game. In the United States, the Food and Drug Administration (FDA) regulates the food industry, the Federal Communications Commission (FCC) regulates the telecommunications industry, the Federal Aviation Administration (FAA)

regulates the aircraft industry in both the design and construction of aircraft and the operations of air travel and freight services, including air traffic control. If you want to operate a business in one of these industries, you have to meet the regulations. All mandated law-enforced regulations are fitness criteria. The regulator is a stakeholder in one respect, a customer of the product or service, and its needs must be met. In many cases the regulator represents the needs of customers when the customers are not at liberty, or qualified, to make safety inspections for themselves. By enacting safety into law, a level of trust is created that enables commerce on a large scale. Of course, the flipside of this is that it creates many opportunities for corruption; many readers from lower social capital countries will recognize that were Neeta in their local market, perhaps, she shouldn't trust that health and safety standards were met in the preparation of her pizza.

Regulatory and safety standards will include functional requirements, features that your product or service must have. These are tablestakes for entering the market. Regulations will also include definitions for non-functional requirements, typically minimum acceptable levels of performance, durability, accessibility, usability, resilience, reliability and so forth. Again, meeting these non-functional requirements is tablestakes for entering the market. For the regulator as a stakeholder, these are the fitness criteria. For lower affordability market sub-segments, these may also be enough, but for richer customers, in mid and high affordability sub-segments, then the regulatory minimum may not be enough. Regulatory authorities create a floor on the market to protect consumers from themselves. There will always be a segment that will buy a cheaper product or service if it is available because safety either never occurs to them, or they assume "it will never happen to me."

## Summary

- Unicorn hunting is for dreamers looking for that once in a century innovation.
- The human condition doesn't change. Most valuable innovation finds new means to deliver better on existing human needs.
- You are more likely to achieve success being open all hours than hunting for a unicorn.
- There are six types of commonly recurring fitness criteria:
  - Affordability (or sometime just price)
  - Convenience
  - Lead time and its predictability
  - Optionality
  - Quality and its predictability
  - Safety and conformance with regulatory requirements
- If you are unsure what is driving customer selection in your business, these common fitness criteria can give you a good start.
- The commonly recurring fitness criteria reflect things that humans have cared about for millennia. Your task as an innovator is find new ways of serving them better.
- Lead time is not a single number. It is important to consider not only the typical and average cases, but also the best and the worst. Ask how fast, how predictable, and how timely, it needs to be.
- Customers' purpose is often linked to their timeline, therefore lead time is a ubiquitous fitness criterion. Every business should be measuring it.
- Quality can be of functional ("what") and non-functional ("how well") variety. "How well" is often more difficult to achieve than "what."
- Price is not an independent variable. Price relates to quality. At low price points, we expect something to be fragile to break or disappoint us. At mid-price points we expect resilience in our product and service. We anticipate that it can be repaired, replaced, or modified to deliver on expectations. At high price points we expect robustness – it should not break.
- Affordability can be mapped to socio-economic status, wealth, and liquidity.
- Markets should always be segmented by customer purpose but can be sub-segmented by affordability.
- Products and services can be made more affordable by the means of purchase
  - Outright purchase with cash (capital)
  - Incentivized purchase with government subsidy, tax rebates, or other means
  - Financing (purchase by instalments)
  - Lease (temporary ownership with an initial downpayment or deposit)
  - Rental or Subscription
  - Sharing