

THE SME GUIDE TO DESIGN THINKING, UI/UX AND DIGITAL STORYTELLING



SG:D PIXEL



WHY THIS MATTERS?

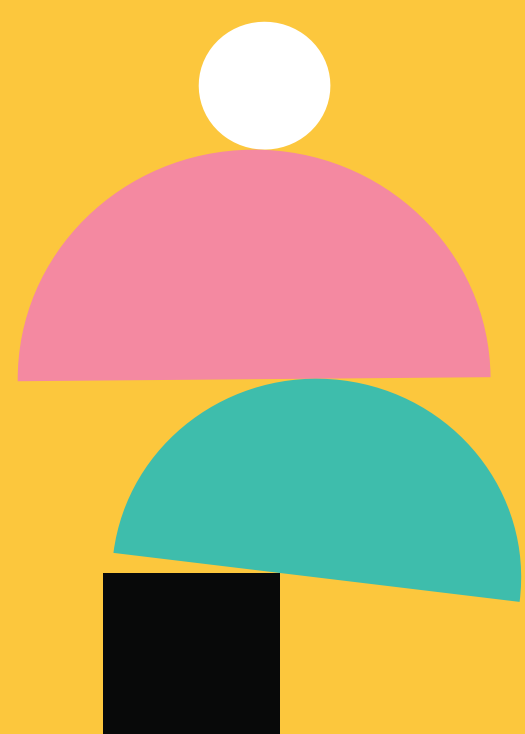
This guide will take you through **design thinking** – the philosophy that underpins the approach used by Airbnb, as well as the importance of **UX and UI design**. You will also discover the value of **digital storytelling** and how it influences decision making in consumers.

In 2009, a young startup in San Francisco that offered temporary accommodation for rent was on the verge of bankruptcy. With a revenue of just US\$200 per week, there was no hope of getting noticed by any investors and venture capitalists.

When the three young founders of the startup looked at the search results for New York listings, they noticed a pattern. The photos used for 40 of these listings were of substandard quality, often taken with camera phones or reused from classified sites. These photos were not good enough to convince a user to book listings or even worse, might have turned them away. The founders decided to travel to New York and rented a camera to take high quality photos of the listings. In mere weeks, revenues doubled to US\$400 per week.

Today, this startup is known as Airbnb and is worth over US\$20 billion, having revolutionised tourism. By putting themselves in the shoes of the end user, the startup was able to innovate new solutions that would provide an exceptional user experience.

Source: [How Design Thinking Transformed Airbnb from a Failing Startup to a Billion Dollar Business](#), First Round Magazine

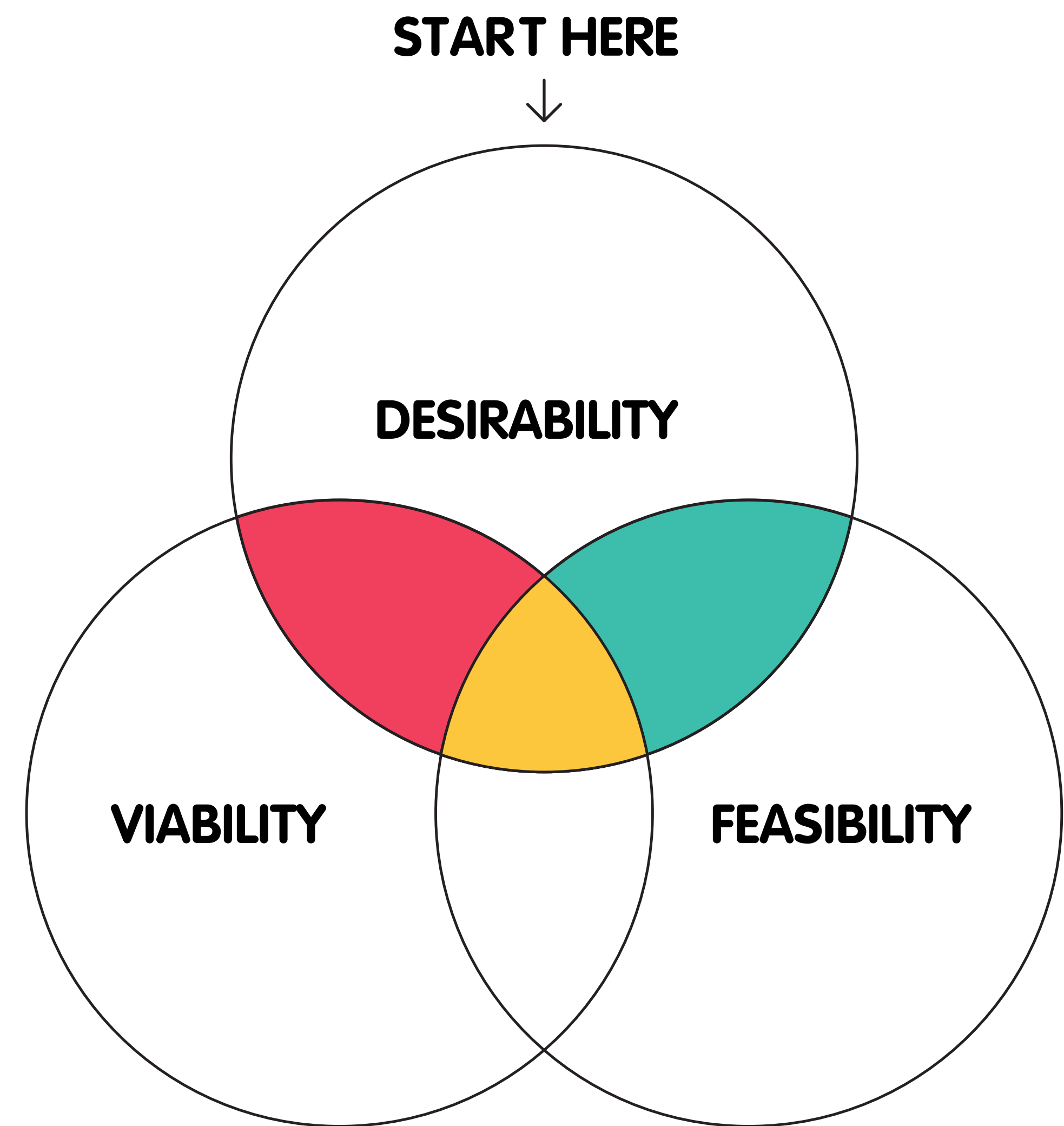


WHAT IS DESIGN THINKING?

Design thinking can be defined as a methodology or mindset that helps organisations innovate and transform their business. Central to design thinking are the ideas of user research, understanding of intent and iteration through prototyping.

Not to be confused with the concept of design, design thinking goes beyond the aesthetic looks of a product to encompass an entirely new way of approaching product innovation and development. To this end, design thinking need not involve digital products, but can even be applied to fields ranging from policymaking, workplace experience design and even strategising business models.

This new way involves figuring out what is desirable from a human point of view, what is technologically feasible and economically viable.

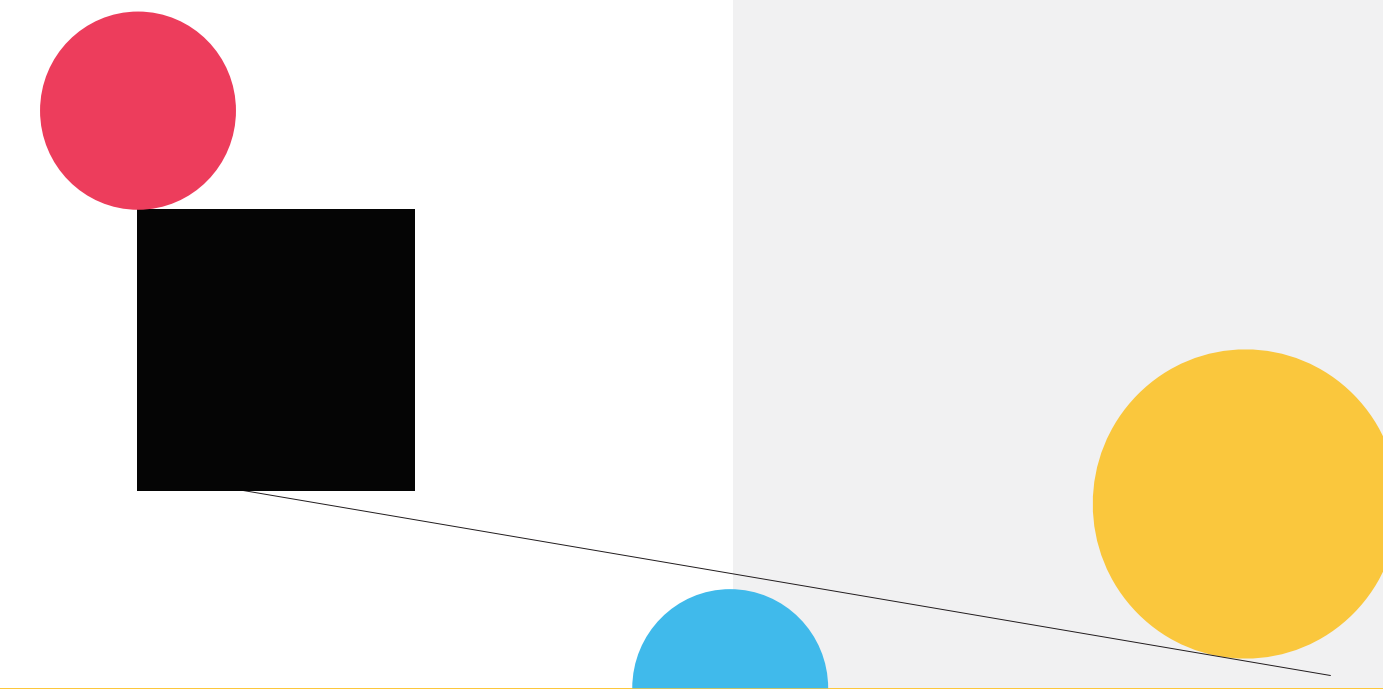


WHY DESIGN THINKING WORKS

At its core, design thinking is a way to challenge assumptions, overcome human biases and go against conventional methods of problem solving. Key to this approach is empathising with the user and understanding what they really want.

A conventional approach to problem solving will inevitably create conventional solutions. This limits innovation and the pursuit of better solutions. By understanding the user, businesses can discover entirely new problems that are not even expressed, which can form the basis for new innovative solutions.

The ideas of prototyping and iteration are also fundamental to design thinking. Getting a product to market in its final form and realising that it doesn't address users' needs leads to immense waste. In contrast, the iterative approach of prototyping and testing lowers this risk and transfers it into the design process.



DESIGNING FOR STRENGTHS AND PLEASURES

Katie Gaudon is a design thinking researcher at the Royal College of Art in London. In her work with the Kingwood Trust, a UK charity, she was tasked with designing living environments for adults with autism and Asperger's syndrome.

She observed Pete, one adult who suffered from autism, to be engaging in small damaging acts like picking at a leather sofa and rubbing indents in a wall. Her first impulse was to think of ways to prevent these destructive acts.

But upon spending more time with Pete at his home, she tried mirroring his behaviour and found his activities to be quite satisfying. The sofa was fun to pick and pressing her ear against the wall and rubbing the indentation made her feel a tickle in the ear and

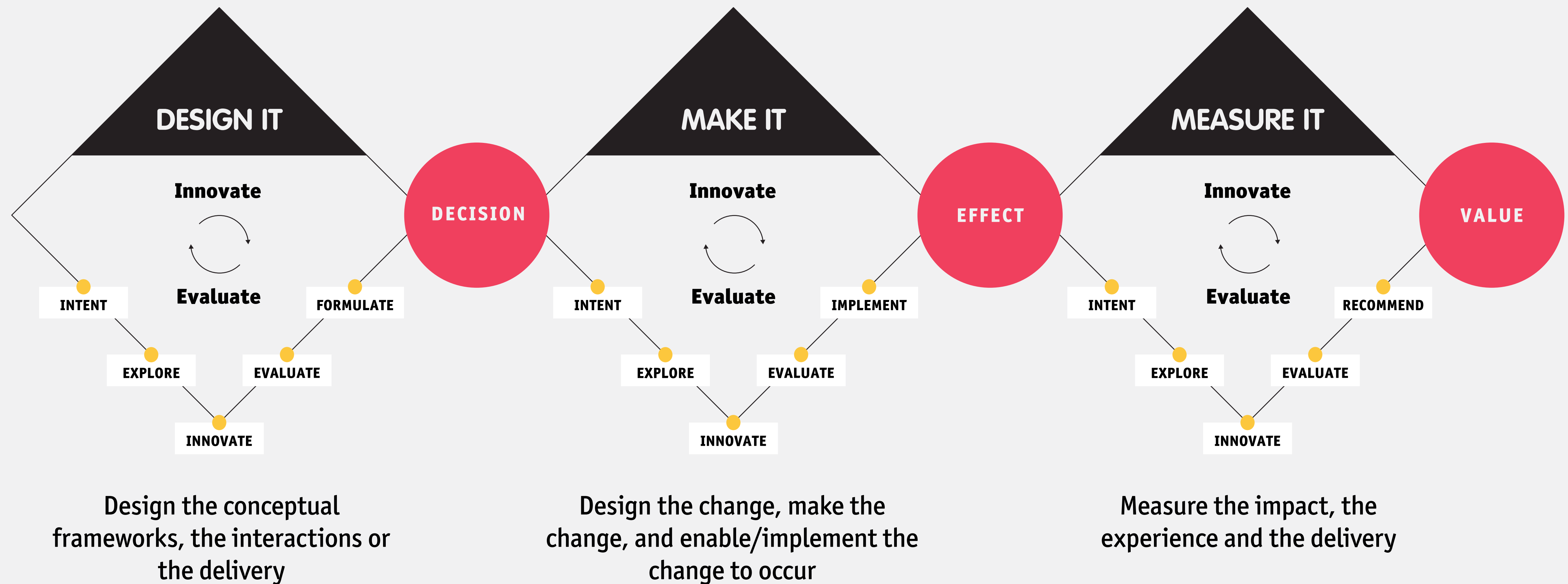
music vibrations. "Instead of a damaged wall, I perceived it as a pleasant and relaxing audio-tactile experience", Katie explained.

Katie's immersion and empathy with the user helped her reframe the problem from designing for the residents' disabilities and safety to designing for their strengths and pleasures.

Source: Why Design Thinking Works, Harvard Business Review, September 2018

THE DIAMOND MODEL GUIDE TO DESIGN THINKING

The precise frameworks recommended by design thinking practitioners could vary based on the individual business case. But one common model espoused by ThinkPlace, IMDA PIXEL's design thinking consultants is the triple "diamond model" as shown below.



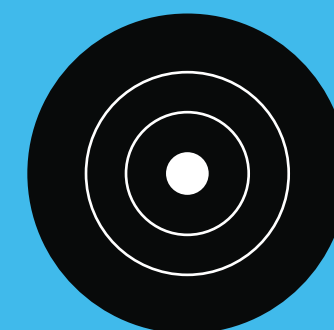
Each of the diamonds represent a series of steps involving iterations of divergent and convergent approaches.



STEP 1: INTENT

Each stage begins with an understanding of the intent behind the change. In the initial design stage, this could involve an understanding of the business problem, while in the make and measure stages, the aim would be to align on the intent for the implementation and measurement respectively.

Engage the key stakeholders of the business area and the voices of the core design team to clarify the drivers, the agreed approach and the desired outcomes.

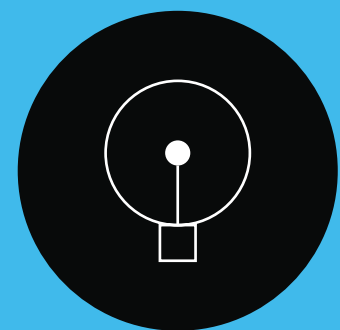


STEP 2: EXPLORE

The Explore stage takes a multi-perspective lens to the problem, where you conduct ethnographic research to understand the user. This research should ideally include both quantitative research comprising surveys, market research reports and web or app analytics data and qualitative research from interviews, focus groups and observations.

The idea is to get a deep understanding of their needs, emotions and pain points in the context of the problem and to find patterns within a large set of potential users to generate insights that will inform your design.

A useful heuristic here is the creation of personas. Personas are semi-fictional representations of different types of your users. They might differ in demographics, experiences, behaviours, needs and goals. Closely tied to personas are customer journeys, where you map out the entire experience of the customer as they interact with your business through multiple touchpoints over time.

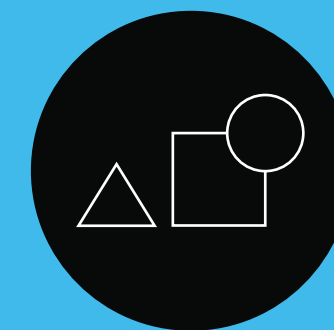


STEP 3: INNOVATE

With a clear definition of the problem and specific personas to cater to, start coming up with ideas for solutions. This is a time to think freely and “outside the box”, without being restrained by assumptions and conventions. Brainstorming, mind maps, lateral and divergent thinking are all techniques you can adopt here.

Once you have generated ideas, create prototypes to see if they solve the users’ problems. Prototypes are inexpensive, scaled-down versions of a product purely aimed at investigating the feasibility of the idea and getting buy-in for actual production. They are “low-fidelity” in nature, meaning they are just complete enough to translate the high-level design idea for testing. The aesthetics, interaction and visual appearance are not considered at this step.

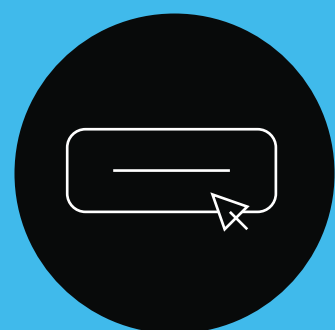
Prototypes can be wireframes of apps and interfaces, information architecture or site maps, powerpoint decks illustrating user flows or even simple paper models and cardboard cutouts.



STEP 4: EVALUATE

Once your prototypes are ready, it’s time to test them out with real users. Simulate an actual user interaction with your product or service to observe whether it solves the problem and discover gaps if any.

If there are gaps, or if further improvements can be made, re-examine all the steps from the problem definition. Perhaps the user research and person creation in Step 2 could do with a revision, or maybe the ideas and prototypes in Step 3 could be better. Make your corrections to test again and continue improving in an ongoing iterative process to arrive at an optimum solution that tests well during evaluation.



STEP 5: FORMULATE, IMPLEMENT OR RECOMMEND

The final step in the design diamond involves formulating a defined proposition that describes the future state and how to achieve it with the core concepts. In the case of digital products, blueprinting, UI documentation and back end requirements for handover are common tangibles.

In the make stage, the product is ready for implementation. The goal here should be to embed the change by defining the impact and business benefits to aid in decision making. Prepare documentation for training, skill development and for users to transition from the current experience to the new experience using change management strategies. In the measure stage, recommend a set of indicators which will show whether the change implemented is successful and creating value.

Sign up with PIXEL for *project-based coaching with a Design Thinking consultant.

Get a practical and experiential understanding of these principles as you apply them to your digital innovation projects.

<https://go.gov.sg/pbc01>



WHAT IS UI/UX?

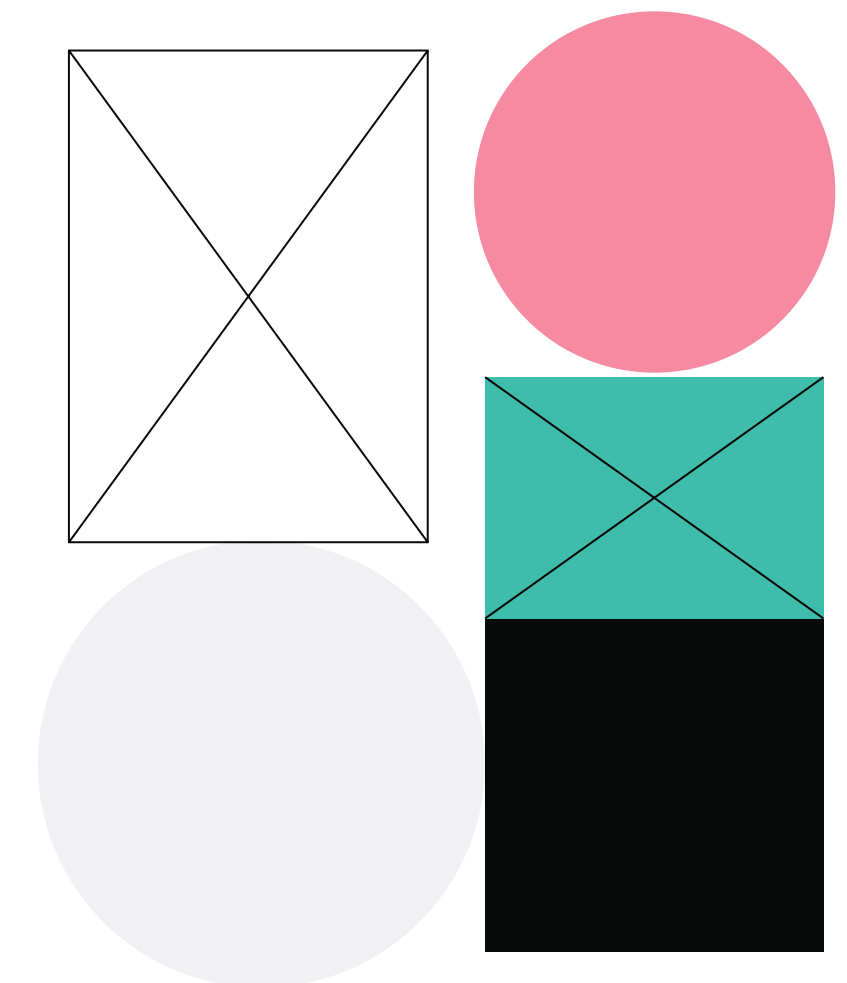
Both user experience (UX) and user interface (UI) design are fundamental elements of design thinking.

User interface design is the process of building interfaces on products that allow users to use it intuitively and with ease. Most people picture a graphical user interface (GUI) when they think of UI design. It can also involve voice-based interactions and new, interactive technologies like 3D environments, Virtual Reality and Augmented Reality as they evolve.

User experience design is a broader term that refers to the process of ensuring a meaningful and relevant experience overall for the user while they engage with a product. It goes beyond the interfaces that users see to encompass the entire process of discovering, acquiring and integrating the product, on boarding, branding, usability and aesthetics.

WHY UI/UX MATTERS

No matter how good your product looks on the surface, users often care most about getting their tasks done easily and with minimum hassle. A good UX, enabled through a good UI also builds trust with users.



HOW THE BRAIN THINKS FAST AND SLOW

In his seminal book *Thinking, Fast and Slow*, the Nobel prize winning psychologist Daniel Kahneman described two modes of thinking in the human brain.

- System 1: Fast, automatic, frequent, emotional, stereotypic, unconscious thoughts. These could include determining distance between objects, locating the sources of sounds and reading text on a billboard among others.
- System 2: Slow, effortful, infrequent, logical, calculating, conscious thoughts. These could include focusing your attention at a specific individual in a crowd, multiplying two two-digit numbers and trying to recollect the memory associated with a specific song.

While system 2 is definitely valuable and indispensable, most of our everyday decision-making is done through system 1 thinking. Specifically, think of the sensory overload, information explosion, digital content noise and short attention spans today.

UX and UI design is essential to ensure that the user is not taxed with too much effortful thinking while interacting with products.

Source: Thinking, Fast and Slow, Daniel Kahneman

Good UX and UI design requires careful consideration to a number of aspects like usability, accessibility, interaction, branding and consistency.

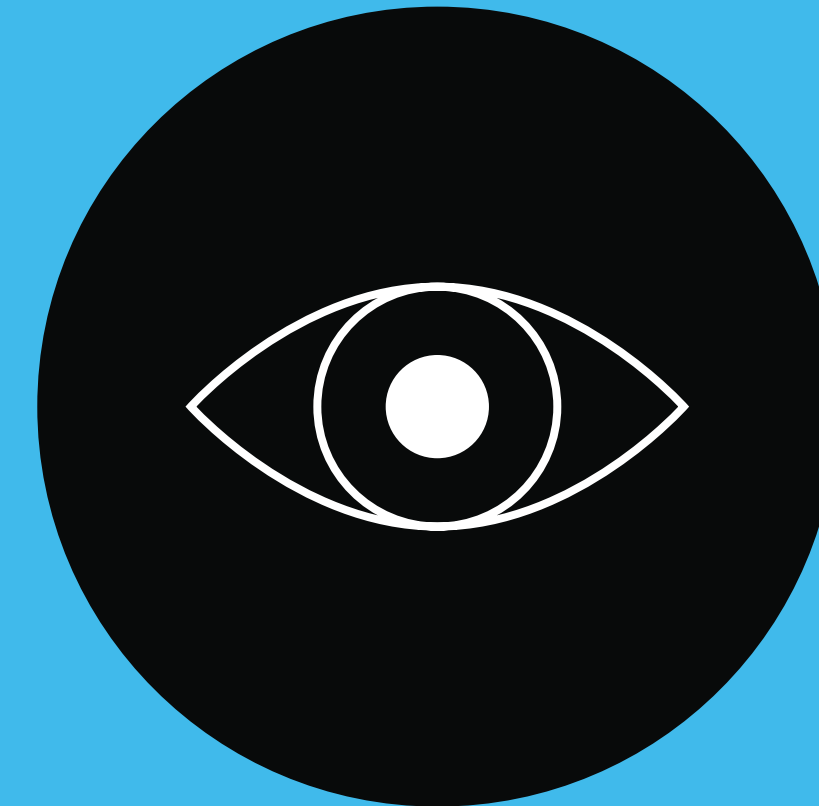


USABILITY

A product could address users problems but still fail because of its poor usability. Usability comprises the following ideas.

- **Effectiveness:** Does it do the job as expected by the user?
- **Efficiency:** Does it get the job done with minimum effort or is it laborious for the user?
- **Satisfaction:** Does it leave a positive experience or emotion with the user?

Consider an app that helps you browse an e-commerce site, find a product, add to your shopping cart and checkout for delivery. If it does all these, it is effective. But what if you are unable to find the product easily, or you click on an “Add to Cart” button but it doesn’t show up in your shopping cart screen. The user may not see it as an efficient way to shop and may be turned away, or even worse go to a competitor’s store. And even if all these steps are executed seamlessly, the user experience could still be neutral without a Thank You message at the end.



ACCESSIBILITY

Good UX and UI design has to work for everyone, including those with a range of abilities in vision, motor skills and auditory and learning capabilities. In some regions, technical issues could also be a factor, like poor internet connectivity and slow page loads. Accessibility is the essential element of design that ensures they can use your product just like everyone else. A wheelchair ramp is a simple example of UX is urban design and buildings, that incorporates accessibility.

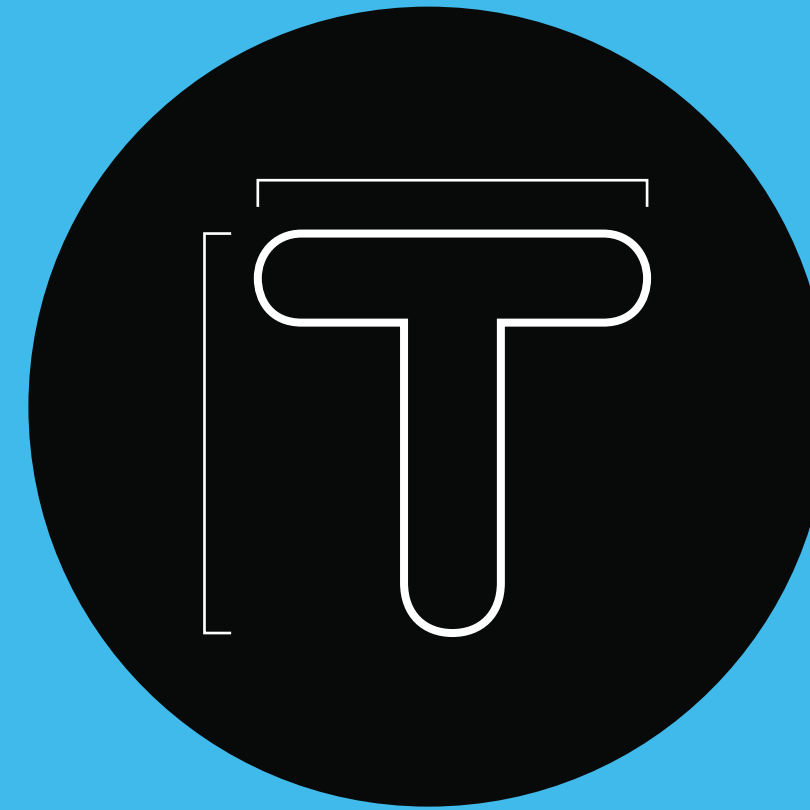
Some countries will have regulations that mandate the design of products with accessibility in mind. But even otherwise, designing for accessibility will generally provide experiences that are good for all users.



INTERACTION DESIGN

Interaction design is the design of experiences and interfaces with a focus on the different ways in which users interact with a product or service. It incorporates the strategic use of **text**, visual elements like **images**, **icons**, **animations** and **videos** as well as **sound** and **haptic response** like vibrations and forces in the case of mobile phones.

While interaction design in general can refer to that between users and products of any nature, today it has come to be focused more on graphical user interfaces and mobile device interactions.



BRANDING CONSISTENCY

Remember that a good user experience is also about **building trust with users**. Key to this is ensuring consistency in branding across all their interactions with your business. This means the visual branding elements, typography, key messaging, tone of voice and graphic layouts should be consistent across the website, app and physical touch-points.

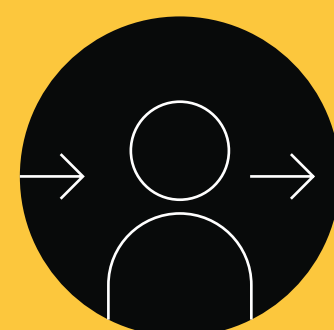
5 RULES FOR GOOD UI AND UX

While the specific approach to UI and UX depends on the type of product or service you deliver, there are certain fundamental steps you can adopt.



START WITH USER RESEARCH

UX being a key component of design thinking, it is no surprise that the first step involves understanding your users. Interview and brainstorm with users, and observe them in their environments. Quantitative research through surveys and market research data also help in completing the picture.



CREATE PERSONAS AND USER FLOWS

Use the research to develop user personas, stories and user flows. User flows refer to the series of steps the user takes while interacting with your product. This could be the elements on a web page or app they interact with, the sequence of pages they visit during their session and the ways in which they exit the experience.



DEVELOP WIREFRAMES AND PROTOTYPES

For websites, apps and other graphical user interfaces, create wireframes that model the layout. Wireframes are essentially blueprints which suggest the possible visual structure of the page with lines, grids, boxes and placeholders for images and content.

Wireframes are different from prototypes, which is a more refined version of the interface but still basic enough. Prototypes should have all the necessary navigation, interaction elements and the essential visuals to simulate a complete user journey. The goal here is to collect all the necessary feedback that can be used to tweak the prototype before testing.



CONDUCT USABILITY TESTING

Once you have a functioning prototype, it is time to test it with real users. Give the test subjects clear instructions on what is expected and observe their experience as an impartial spectator. How effectively and efficiently are they able to get things done? How satisfied are they and what emotions do you observe as they go through the various steps? In addition to observation, you can also prepare questionnaires with specific questions about the experience that users could respond to.

A good environment is crucial for usability testing. PIXEL provides companies with a [Usability Testing Lab](#) for conducting interviews to gather qualitative and quantitative feedback.

The lab is fitted with cameras, wearable eye-tracking devices and galvanic skin response sensors as well as data collection and analysis software such as screen capture and expression recognition.



ITERATE AND LAUNCH

Use the results from the testing to further refine the prototype. Repeat this in multiple iterations until the testing results reveal an optimum user experience. Then, complete the prototype into a fully realised finished product, with all the fine design elements, detail and branding.

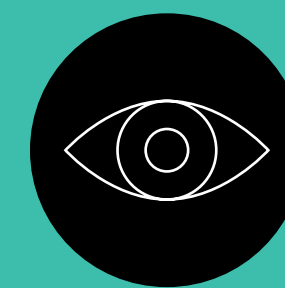
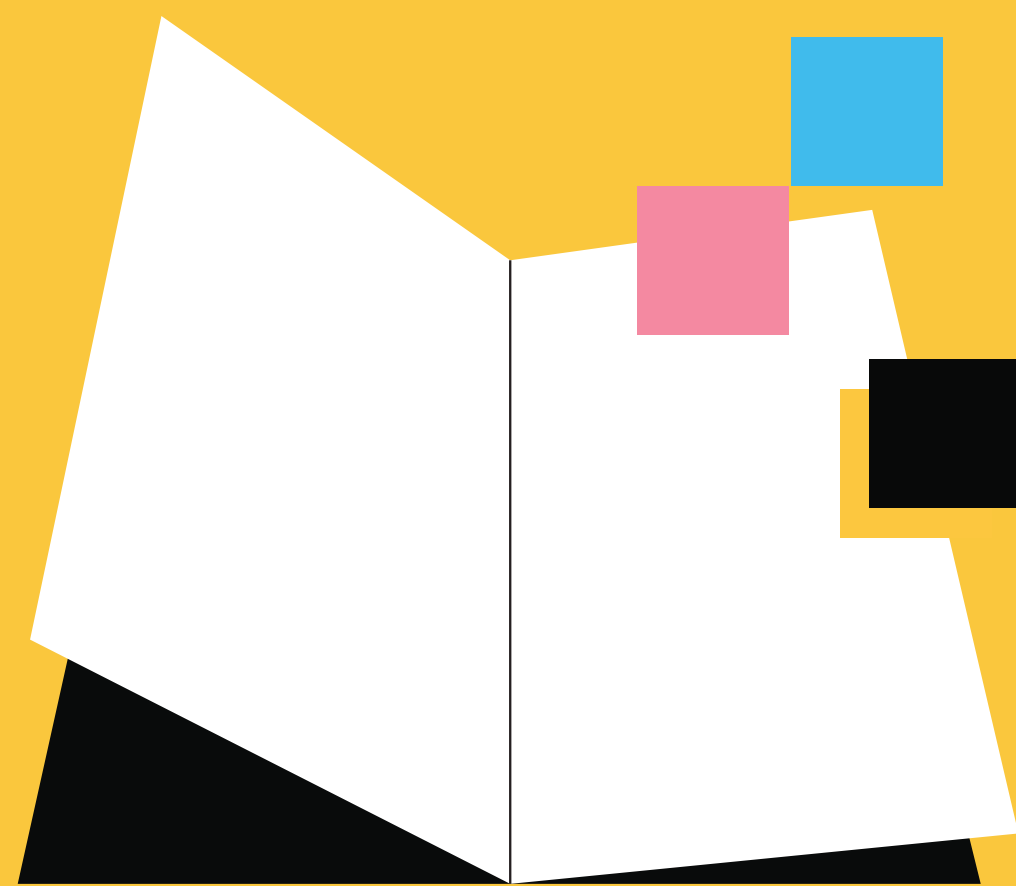
Sign up with PIXEL for [*project-based coaching](#) with a UI/UX consultant.

The assigned expert will help you transform the UI and UX of your digital prototype and make it more customer-centric or cater to new markets.

WHAT IS DIGITAL STORYTELLING?

Digital storytelling entails the strategic use of digital media channels to tell compelling stories and achieve specific business objectives. Businesses today have a multitude of digital channels to choose from to tell their stories. Access to websites, social media, video hosting platforms, mobile apps, interactive interfaces, video games and other channels has levelled the playing field for small businesses and startups. If you can tell an impactful story that resonates with people, you get to break through the clutter and be noticed, even more than a much larger competitor.

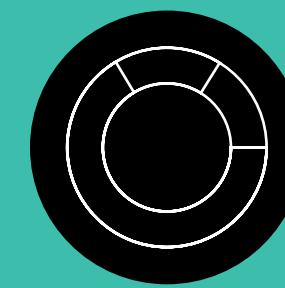
Due to the variety of available digital channels and the different objectives businesses may have, digital storytelling comprises a number of categories:



BRAND STORYTELLING: When a business wants to elevate their existence to more than just being a commercial enterprise, digital storytelling becomes a powerful tool to communicate their history, core philosophies, mission and key values. Think of Apple's groundbreaking 1984 video commercial, or their Think Different ad.



PRODUCT MARKETING: Stories can also be used to position and market products or explain unique value propositions. The note-taking app Evernote is known for its simple messaging that explains the benefits to users.



DATA STORYTELLING: Some brands with access to insightful data have turned to this form of data-driven storytelling. Google's "Year in Search" videos about the most searched words of the year and Spotify's delightful microsites that visualise the music listening habits of users are good examples that are loved by many.



TRANSMEDIA STORYTELLING: With multiple channels at hand, some brands also tell stories across many of them, with one main story adapted for each channel. The toy brand LEGO excels at this, with their storytelling in video ads, social media channels, comic books, video games, billboards and even a hit feature-length film.

These are only a few forms that digital storytelling takes. Brands are always innovating and discovering new ways to use stories to their advantage, as and when new storytelling techniques and digital channels become available.

WHY DIGITAL STORYTELLING MAKES A DIFFERENCE

Stories and narratives have always been a part of human history. Ancient philosophers, poets, artists and filmmakers have enthralled us with great narratives. But why should businesses bother with storytelling?

THE POWER OF NARRATIVES

Humans are psychologically wired to respond to stories. When we hear a story, we develop an emotional connection to the characters involved. Some studies in neuroscience show that your brain waves start to synchronise with those of a speaker when they're telling a story. Others suggest that stories can influence people to make decisions involving money.

FROM TRADITIONAL ADVERTISING TO CONTENT MARKETING

Outbound ads, mass email blasts and TV commercials have become interruptions that today's consumers unsubscribe or block. Content marketing is a more effective alternative approach than traditional advertising. Content marketing relies on providing useful information to the audience to capture their attention, earn their trust and eventually drive to purchase. Good content marketing requires good storytelling. Instead of talking about their products and features, brands are creating impactful stories that feature their customers as heroes.

THE PROLIFERATION OF DIGITAL CHANNELS TODAY

Just a few decades ago, brands had access to just a few channels – print, TV and radio – where they could advertise. Today, the internet and social media has given rise to a number of channels, each with their own features and formats. Blogs, infographics, video interviews, animated explainers, eBooks, whitepapers have all become staples of digital storytelling.

HOW STORIES INFLUENCE DECISION MAKING IN THE BRAIN

In a fascinating experiment, neuroeconomist Paul Zak asked two groups of people to donate money to a stranger. One group was shown a video of a terminally ill boy, edited to reveal tension and a dramatic arc. The other group was shown another video of the boy but without any dramatic tension or mention of his disease. Zak found that the group which watched the dramatic version had higher levels of oxytocin in their blood.

Oxytocin is the “love hormone” or “cuddle hormone” in our body, associated with feelings of warmth, bonding and empathy. In fact, the group that showed higher levels of oxytocin were also found to be 80% more generous in donating money to a stranger in the experiment.

Source: [*Why Inspiring Stories Make Us React: The Neuroscience of Narrative*](#)

HOW TO EXCEL AT DIGITAL STORYTELLING

While it has become easy for anyone to write content, design visuals and create videos for public viewing today, it takes a lot more to stand out from the crowd. Just like design thinking and UI/UX design, understanding your audience is essential as a foundation. There is no magic formula to creating good stories, but the following checklist is a good rubric to follow.



START WITH THE “WHY”

The renowned business author and motivational speaker Simon Sinek talks about the importance of focusing on the “why” when it comes to marketing and brand storytelling. “People don’t buy what you do, they buy why you do it”, says Simon. In developing your stories, think about the reason for your brand’s existence – your mission, values and how you make your customers’ lives better. This should come across either explicitly or implicitly in your stories, irrespective of the digital channel they appear on.



FOCUS ON PEOPLE

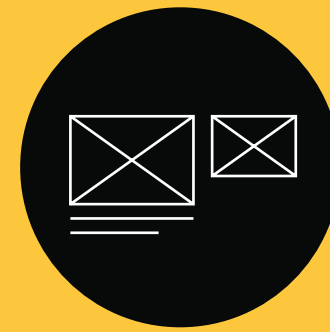
As much as possible, your stories should be centred around people and characters the audience can relate to. Microsoft exemplifies this in their customer stories where they feature their customer employees as protagonists of success stories and case studies. In other cases like data-driven storytelling, you may not have real people to feature, but even here the aim should be to deliver insights that affect people’s lives.



CHOOSE THE RIGHT PLATFORMS AND FORMAT

Stories can be told through written text (articles and blogs), spoken word (product pitches and presentations), audio format (podcasts). They can also be photo-led stories, video interviews, animated explainer videos, short films, interactive microsites with multimedia elements or a mix of them all.

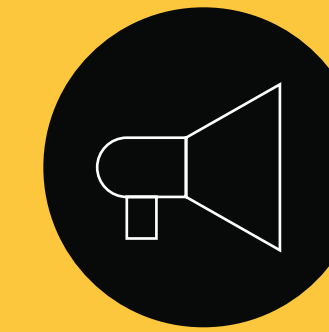
Think about your target audience and how they consume and engage with stories. Do they prefer video interviews of your founder on their Facebook feeds or are they more discerning in seeking out the source, say your website, to look for social proof stories from satisfied customers. These attributes of your audience should dictate where (platform) and how (format) you choose in telling your stories.



STORYBOARD BEFORE GOING VISUAL

Visual storytelling generally requires more resources and investment. For example, a video commercial generally requires booking dates for creative directors, cinematographers, production managers, talents, technical crew members, locations and audio and video editing resources among others.

Creating a storyboard helps align everyone on a rough estimate of how the visual output should look like before the camera starts rolling on production day. Think of storyboards as a rough prototype which can be iterated based on feedback from the various stakeholders before going into “launch”.



DISTRIBUTE, PROMOTE AND AMPLIFY

Without distribution, your stories will not reach audiences easily. Distribute your stories on the platforms most frequented by your audience. This should start with organic promotion through search engine optimisation and sharing on social media.

Organic visibility on most platforms however is declining today. To ensure your content is seen, explore paid promotion as well. Google Ads, Facebook Ads Manager and LinkedIn Campaign Manager are the advertising tools available to get paid reach on these respective platforms.

Another way of increasing the visibility for your stories is through partnerships with media publications. This could be an opportunity to earn free media coverage for your stories, although in some cases it might require a paid partnership.

Sign up with PIXEL for *project-based coaching with an assigned consultant.

You will get a practical and experiential understanding of Digital Storytelling, and transform your digital products and services to create customer-centric experiences.

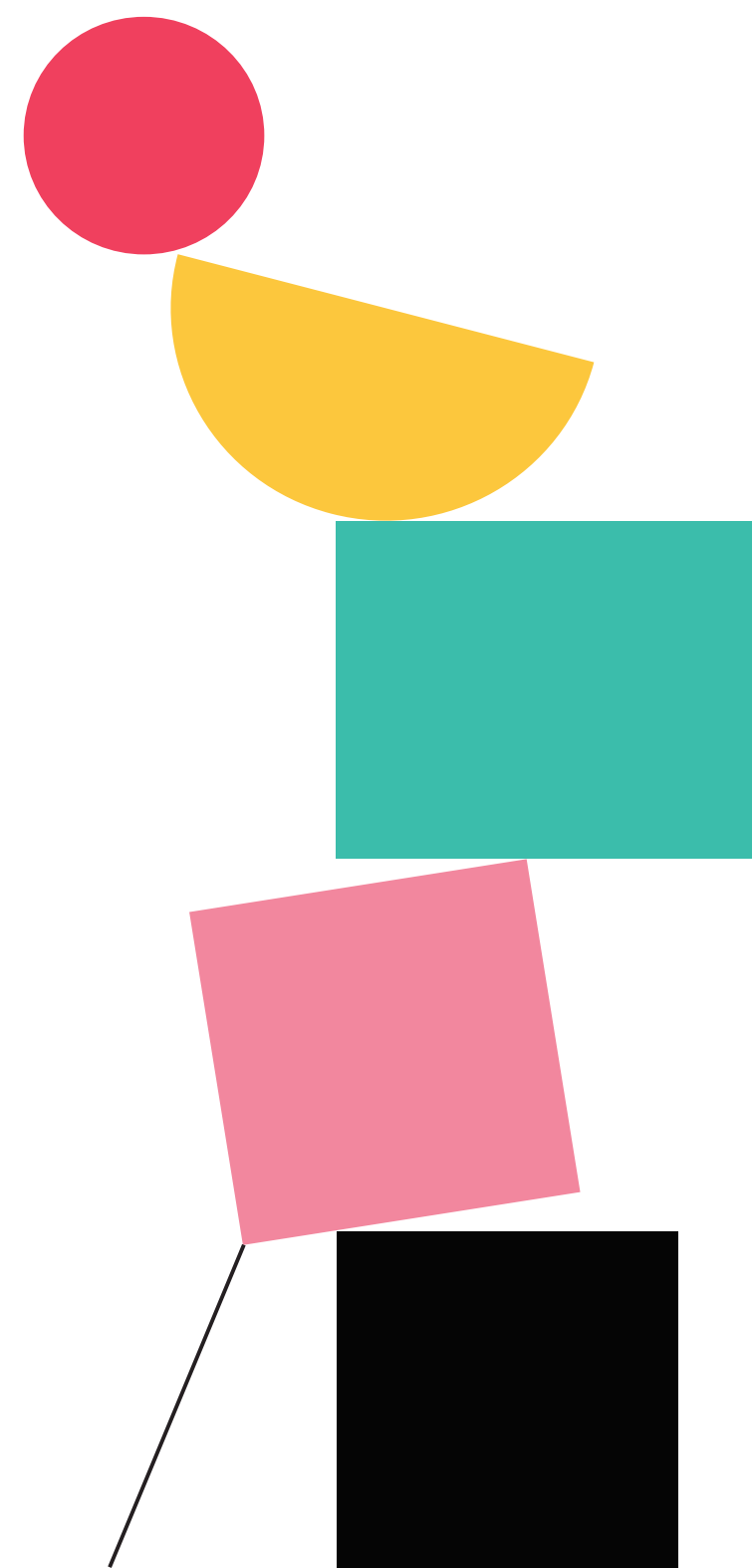
<https://go.gov.sg/pbc01>



** All applications will be subjected to approval*

FROM PIXEL TO LIFE

SIGN UP FOR PIXEL'S PROJECT-BASED COACHING



If you are a **Singapore-based business, tech and media start-up, SME or LLE**, PIXEL can support your innovation journey with your **digital product** through workshops and masterclasses, project-based coaching, labs and production studios.

[Sign up](#) for PIXEL's *project-based coaching which will be **subsidised up to 70%** of the total man-day cost of engaging consultants, capped at \$70,000.

By the end of the project-based coaching in each of the topics, you will come away with more practical and tangible results:

DESIGN THINKING:

An experiential understanding and how it can help you innovate, including customer journey maps and working prototypes.

UI/UX:

An improved UI/UX of your digital prototype or solution, with deliverables like user research, insights, prototyping ideas and user testing in labs.

DIGITAL STORYTELLING:

A practical understanding of how it can help you create customer-centric digital products and experiences.



Take the case of [Continental Electronics](#), Singapore's rapid prototyping and turnkey solutions provider. Under the Open Innovation Platform (OIP), they had paired with UnaBiz, an Internet of Things solutions provider to solve a business problem. UnaBiz needed a solution to track the delivery of their parcels and to see if there was any tampering along the way.

PIXEL's design thinking project-based coaching enabled Continental Electronics to take an iterative approach and develop a smartbox trackable parcel that notified users if their parcels were tampered with. Continental Electronics went even further to apply the framework to other projects, including a device that detects and regulates noise levels in HDB decks and another that remotely keeps track of ice inventory in freezers!

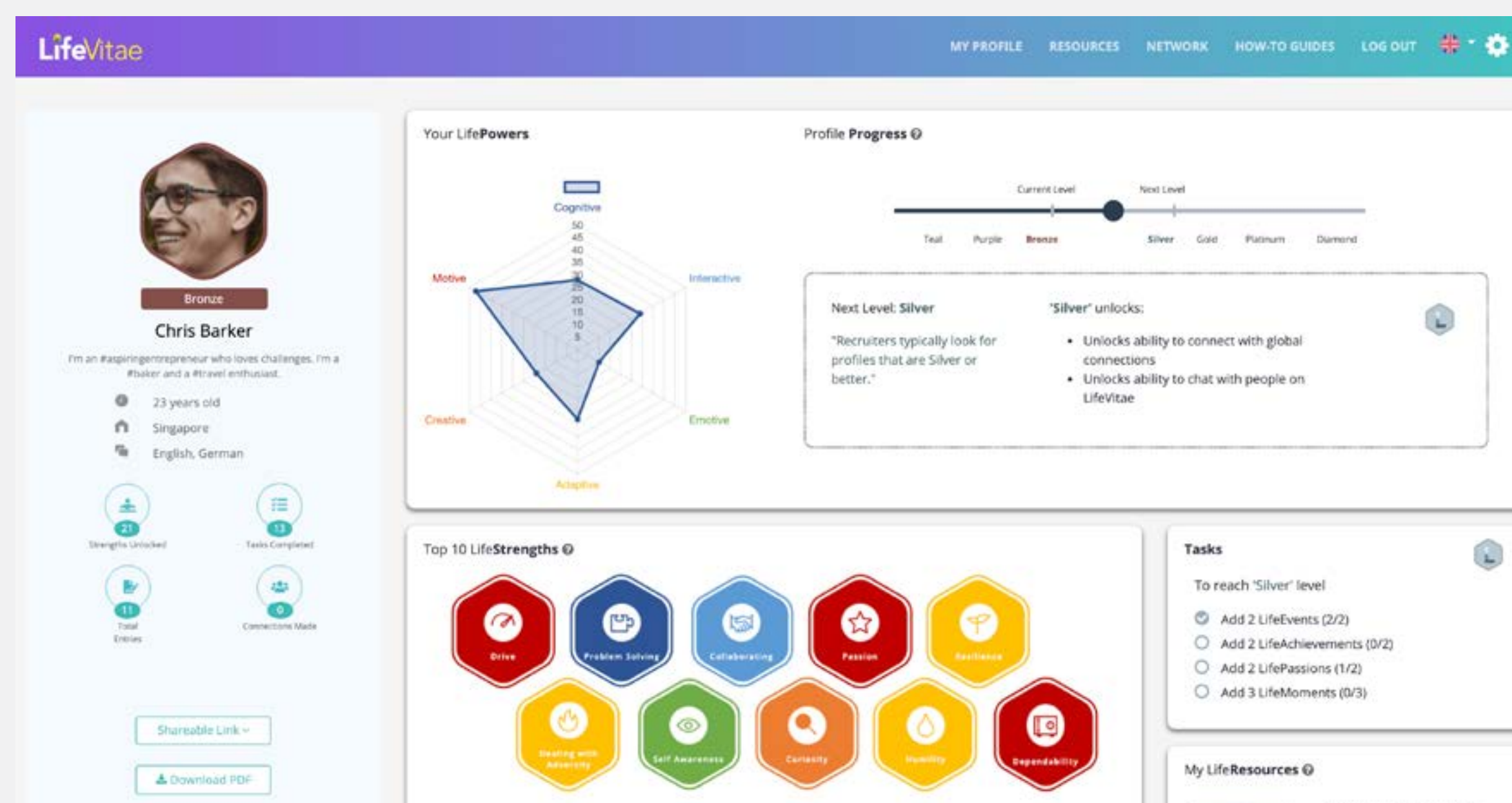
"PIXEL's design thinking coaching challenged us to think from the point of view of our end-users. By viewing problem statements from the customer's perspective, we were able to design a better user experience for them. We now take a more holistic, human-centric approach to the entire product development cycle."

Yihao Khoo. Director, Continental Electronics



LifeVitae

A similar success story can be seen with [LifeVitae](#), a platform for users to curate and describe their pivotal moments as an alternative to a CV. Through a 9-week consultation with a UI/UX consultant on PIXEL's expert panel, LifeVitae improved its user experience through clear communication of the platform's benefits and a guided tour. They saw a significant increase in users returning to the platform to edit and improve their profile, which in turn translated into higher traction for monetised features like coaching and courses. PIXEL's project-based coaching helped LifeVitae reduce account creation time from 20 minutes to 5 minutes, add features to introduce and onboard users and made the platform more interactive and engaging through gamification.



“IMDA through ThinkPlace has helped us strengthen our offering through superior design thinking translating into a better user-centric design. Since this project was run completely remotely, we had to strongly rely on the team’s capabilities of innovation on the job as well as remote usability testing while keeping to the strict timelines and budget.”

Priya Sengupta, CEO & Founder, LifeVitae

FROM PIXEL TO LIFE

To find out more, email us at pixel@imda.gov.sg

 10 Central Exchange Green, S(138649)

 impixel.imda.gov.sg

 [impixelsg](https://www.instagram.com/impixelsg)

 [IMPIXELsg](https://www.facebook.com/IMPIXELsg)

 [SG:D PIXEL](https://www.linkedin.com/company/SG:D_PIXEL)

