

These notes summarise a threeday workshop with Justin Ferrell, founder of the Professional Fellowship Program at the Institute of Design at Stanford University (the d.school).

Design Thinking is a process for creative problemfinding, problem-framing and problem-solving. It's a way of working that is human-centred at its core. Founded and developed by David Kelley at the Institute of Design at Stanford University (the d.school) and at his consulting firm, IDEO, Design Thinking encourages organisations to focus on the people they're creating for, which leads to better products, services and experiences.

In employing Design Thinking, you are identifying what's desirable to people, while also considering what might be technologically feasible and economically viable for your company. It enables people not trained as designers to use creative tools to address a vast range of challenges. Design Thinking methods help teams examine human behaviour, then use their skillsets to rapidly prototype toward meaningful outcomes for those they seek to serve.



Day 2 and Day 3 recordings also available.

DAY 1 SLIDES CAN BE ACCESSED <u>HERE</u>. FEATURED WORKSHEETS HERE.

WHERE IS DESIGN THINKING VALUABLE?

- Innovation requires trying things and working in ways we haven't before. However, this is one of the biggest barriers for humans, who often disregard creativity at an early age. We opt out of being 'creative' promoted by the misconception that creativity is the domain of artists, and are not incentivised by organisations to try things we're not 'good' at in professional life. The belief that you can accomplish something you have set out to do, even though you've never done it before and in a way that you've never done something before can be referred to as 'creative selfefficacy'. This can be incentivised and grown within organisations to drive innovation.
- One of the great values of Design Thinking is its inherent optimism about not knowing what is to come. In what many consider to be an increasingly complex world and following a global pandemic that taught us the future is not entirely within our control, this optimism provides the momentum to move into the unknown with purpose.
- Design Thinking is focused on innovators rather than innovation. We often think of innovation as the outcome, but when you are outcome-focused there will always be another outcome; no matter what we create, the impact of that is not going to last forever. Rather than focusing on outcomes, Design Thinking emphasises creativity engines as a way of working. Creativity engines constantly generate ideas and thus allow us to consistently come up with innovations? One of the great values of working in this way is that it generates new ideas and knowledge within an organisation. While we still have to make decisions on feasibility, it helps us as professionals make more informed decisions. The more knowledge we create, the more interesting possibilities we have to make decisions about.



HOW DO LEADERS MAKE KNOWLEDGEABLE DECISIONS?

In Knowledge Management, knowledge can be split into two areas: explicit and tacit. Explicit knowledge is that which is quantifiable and very easy to share. Tacit knowledge is that which is learned by doing and experience. For example – you can know everything about the engineering of a bike (explicit knowledge) but you will only learn how to ride that bike by practicing (tacit knowledge). Design Thinking generally involves more tacit knowledge.

Organisations generate knowledge in two ways: by working on core products and services, and by working towards new ideas. Working on the core is marked by exploitation, that is exploiting the resources you have towards a predetermined outcome. Whereas the new is marked by exploration.

Exploiting, which leads to incremental innovation, is something that large organisations are inherently good at, but exploration is where they are lacking. Organisations need to understand how to manage the different skills sets required from both. If we can learn about the different skills for future-focused work, then organisations can incentivise those behaviours.

Skills required to exploit can be summarised as: plan, execute, repeat. Whilst those required to explore comprise generate, incubate and scale. Successful organisations match their incentives to the appropriate skill set. Design Thinking is most compatible with the 'generate' stage of exploring, aiding the generation of as many ideas as possible.

It does this in a number of ways:

- **Multidisciplinary Teams.** Diversity is the core of creativity. If you work with those similar to you (in background, expertise and mindset) you are more likely to come up with incremental ideas as you see problems the same way. It is in working with people who are fundamentally different that the most interesting ideas surface. It creates the necessary constructive conflict for radical collaboration.
- **Proximity.** In conducting the empathy and interviewing work at the beginning of a Design Thinking process, the objective is to be as proximate to the people we are trying to serve as possible. In this way we can uncover something that people truly need by understanding them in their context. For example, one news company was investigating how their readers consumed the

news on the way to work. As the first part of their work, they interviewed readers during the daily commute to truly understand their context.

• **Experiential Learning.** Reflecting the Design Thinking process, all courses at the d.school (where Justin teaches) are project-based and work with real business challenges. The outcome is unknown and the process emergent.

HOW TO NAVIGATE AMBIGUITY?

Navigating ambiguity involves stewing in the discomfort of not knowing, leveraging and embracing parallel possibilities and emerging from uncertainty. We as professionals and individuals often view ambiguity as a barrier to be overcome; however, discovery only exists within the unknown.

Individuals navigate ambiguity in three main ways:

- **1. Endure.** Ambiguity is a moment of time that comes before a solution, and is antagonistic to the objective. It must be conquered to reach the goal.
- **2. Engage.** Ambiguity is an off-road adventure; an alternate path to a goal. It might be rewarding or helpful, or dangerous and detrimental. Its value is a chosen gamble. Exhilaration and exhaustion are equally expected.
- **3. Embrace.** Ambiguity is oceanic and ever-present. The longer you spend in it, the more likely you are to discover something new. Because every direction is a possibility, navigation isn't simple; it requires patience, practice and encouragement.

Having a shared language around your strategy for ambiguity is important for direction setting and transparency.

CREATIVE CULTURE TIP 1

Encourage the uncomfortable in yourself and others. When's the last time you tried something you've never done before? If you only do what's asked of you as an employee, that's all you'll ever produce. Likewise, as a leader, if you only ask for what you think you want, that's all you'll ever receive in return.



DESIGN THINKING FOR HR LEADERS

THE TOOLS OF DESIGN THINKING

The **Design Thinking Hexagons** are a useful tool for businesses in understanding the basic 'notes' of the process. There are five phases. The first two: *empathise* and *define* focus on problem finding, and the last three: *ideate, prototype* and *test* focus on problem solving.



As we move through the phases we are converging and diverging as we go: what is referred to as focusing and flaring in the Design Thinking vernacular. Opening up to maximum input and then refining these at the following stage. These remain distinct activities, so as to gain the maximum value from the use of each.

Problem framing

The way we frame the problem often determines what we create. When working toward incremental innovation, frame the problem around the solution. When working toward transformation innovation, frame the problem around the behaviour you're trying to encourage. Then ask yourself, whose behaviour? That's who you engage with when you start your empathy work.

PHASE ONE: EMPATHY

What is empathy? The ability to think through the experience of another person by understanding it as best you can.

Why is empathy so important? The goal is to design something that people will use. In order to do this it has to fit their lives in a meaningful way, and to design something meaningful you need to understand their behaviours and beliefs. Why empathise? To uncover your user's needs, discover design opportunities, challenge assumptions, reframe the problem, gain inspiration and obtain a fresh perspective. Not only does empathy work help you understand the intrinsic needs of a person or group of people, but it can also create momentum to motivate others to participate beyond the coldness of market opportunity.

Who do we go to for empathy? Within Design Thinking we are focused on either extreme or analogous users. In extreme users the needs and insights are amplified, with current workarounds more noticeable. For the Design Thinking process this means early solutions are more unique and provide more opportunity to be tested for wider resonance. Analogous empathy is about learning from others who design in different scenarios and applying that learning to your problem.

REFRAMING THE PROBLEM CASE STUDY

In a class at the d.school, groups of interdisciplinary students are tasked with producing a physical product solution to meet challenges faced in a certain part of the world. The group in question were challenged to design a lower-cost baby incubator for Nepalese hospitals where infant mortality rates were high. The thinking was that if they could lower the cost of the machines, then the hospital could afford more and therefore save more lives.

When the students travelled to Nepal to conduct their empathy work, they noticed that the current incubators were empty. When they asked why, the local doctors told them that those babies that are most vulnerable often never make it to the hospital as they arrive prematurely in remote, rural villages and mothers are unable to make the journey safely.

This discovery left the students with a dilemma. Should they stick with the problem they were assigned, or should they reframe the problem to be about the parent rather than the clinician and potentially save more lives? They decided to take the latter approach, and following completion of the class remained together as a group to create a portable infant warmer that has saved more than 300,000 babies' lives and is currently deployed in 22 different countries.

By approaching the issue in a creative problem-finding way, rather than a problem-solving way, the group was able to produce a solution that was much more meaningful and impactful to those who were going to use it. They recognised the unique opportunity for impact.

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CREATIVE CULTURE TIP 2

Learn by doing. Don't ask to pursue an idea; start small and get going. There's no way to precisely predict the impact of what doesn't yet exist, so forget about ROI for now – you have to do it to find out. Once you start something, you'll be in a position to ask for help instead of permission. Remember that prototyping organisational change is similar to prototyping a product: only devote increasing resources as your actions show merit, and always learn as you go.



Day 1 and Day 3 recordings also available.

DAY 2 SLIDES CAN BE ACCESSED HERE.

FEATURED WORKSHEETS HERE.

How to empathise

The d.school focuses on three main forms of empathy: immersion, observation, and engaging.

- **1. Immersion.** This is about putting yourself into the place of the people you're designing for. As in a video game, everything should be first person to be able to feel what they feel and notice the opportunities within this.
- 2. Observation. This involves engaging with the world as a child would, to see the world with a beginner's mindset. As adults our mind incorporates the environment which we are seeing and makes decisions based off our previous life experiences. Learning in observation is about looking at a situation with fresh eyes, taking away preconceptions and making notes of the details and patterns without judgement.

3. Engaging. When engaging with a user, they are the expert and you are the beginner. Your goal is to be curios and learn about their experience, to seek the feelings behind actions and move from explicit to implicit knowledge. Be led in your conversation by what you hear in the moment, and understand that often the most generative questions are the most generic.

How to engage

TIP 1:

Begin with simple questions to build rapport and trust.

TIP 2:

Keep questions short. Multiple sentences make it hard for the listener to know when and with what to engage.

TIP 3:

Go for specifics and examples. The more specific you are, the more real information you will get.

TIP 4:

If someone says 'I think' or 'I believe' the conversation is not over. Those words should be signals to get below the surface. Follow up with a respectful 'why?'

TIP 5:

Don't ask binary or leading questions. The answers to these won't help you improve anything. One way to strip out confirmation bias is by working in multidisciplinary teams. Work with a partner to do interviews as your differing beliefs should counter any leading questions.

TIP 6:

Give time to answer, silence is ok! This gives users the time to think and recall experiences and behaviours.

TIP 7:

Capture the interview. This involves capturing non-verbal cues and situational information. It's not just about what they tell you, but also observing the ecosystem you are in.



CREATIVE LEADERSHIP: How to affect organisational change through individual behaviours

"Creative leadership isn't about leaders simply becoming more creative. It's about individuals leading for creativity." **TIM BROWN, IDEO**

No individual can affect change in an organisation by themselves; you have to create a movement and momentum for that to happen. Adam Royalty's (of the d.school) framework provides a compass by which to bring about change in an organisation.



It starts with Creative Self-Efficacy (the belief in one's creative abilities), which is then applied as Creative Agency. The manifestations of this application are the Creative Output, and Creative Impact is the overall effect of this. As you move through each stage you transition from the internal (do you believe you are creative?), to the external (does my work provide value to the world?).

When executives express that they want to lead an innovative company, what they are really expressing is that they want to have Creative Impact on the world. The framework links this output back to increasing individual employees' creative self-efficacy. Those organisations looking to be innovative need to incentivise creative abilities, and make room for risk and failure.

A famous example of this is Google's 20% project, in which employees were asked to allocate 20% of their paid work time to pursue personal projects. The objective was to inspire innovation and increase company potential. In asking people to work with those outside of their usual team on the projects, it incentivised connections and focused on behaviours rather than outcomes. Gmail was created by developer Paul Buchheit on his 20% time.

CREATIVE CULTURE TIP 3

Lead beyond your role. As you start to spread new ways of working, look for other creative leaders within the company. These explorers tend to define their purpose more broadly than their job description, and often operate at the end of their responsibilities. They produce in their role but are dissatisfied with its limits. They want to change the system, experiment and try something new – even if it means risking what's working today to lead for tomorrow.

PHASE TWO: DEFINE

Once you have gathered the information in the empathy stage, you need to make sense of and transform it into a problem or point of view statement for which you can then begin to brainstorm solutions. This is the Define phase of the process.

This phase is a convergent stage which narrows in on a point of view statement. Its basic process is threefold. First is to form an observation based on the information heard during the interview stage, second is to make an inference as to what this might mean, to then thirdly create an insight as to what might be possible as a solution. The inference acts as leap from observation to insight, encompassing the unknown to some extent.

For example, in the case study of the Nepali incubators, the d.school student group observed that no babies were in the hospital incubators that day. On further enquiry they heard "the most vulnerable babies never make it to the hospital", and from this derived the insight that they might help mothers get their babies from village to hospital to increase chances of survival.

To turn this into a Point of View statement, use the following tool:

- We met... (person you or your project is inspired by)
- We were surprised to notice... (tension, contradiction or surprise)
- We wonder if this means... (what did you infer)
- It would be game-changing to... (frame an inspired challenge for yourself)

Playing this out in the example of the Nepalese incubators would look as such:

- We met a desperate Nepali mother living in a rural village whose baby was born prematurely.
- We were surprised to notice that she couldn't get her new born to the hospital in time to receive the care it needed.



- We wonder if this means we might empower and enable mothers to transport their babies from village to hospital.
- It would be game-changing to help transport babies to the hospital in the right condition to receive advanced care.

The Define stage is arguably the most difficult and requires individuals and teams to unpack interviews and find non-linear connections. To do this requires the creation of artefacts to help discuss and surface implicit needs that might not seem obvious and to build a shared understanding amongst your team.

An important and useful tool for this phase is an empathy map. Created by Jane Fulton Suri, it is a pedagogical approach to unpacking an interview in a non-linear way. Unpacking an interview is to get it off the written page and out of its chronological form and begin to make non-linear connections.

An empathy map resembles the below grid.



As one member of the team reads through notes from an interview, others should note down what they hear and place it in the appropriate quadrant. It is not the population of the empathy map itself that is the useful activity, but rather the conversation that it stimulates. It engages teams in the task, pushing them to make inferences about the actions and behaviours they observed and collide their perspectives to travel in a direction they wouldn't otherwise.

PHASE THREE: IDEATE

This phase begins the start of the problem-solving stage. When transitioning from defining to ideation, we are setting aside our judgements to generate as many ideas as we can and entering a 'flaring' phase.

When you brainstorm and generate ideas, you are balancing two goals: fluency (the speed and quantity of ideas) and flexibility (ideas that are truly different and distinct). If you have a lot of ideas that are variations on a theme, you might really have only one idea with twentynine other versions. When you combine fluency and flexibility, you can generate a rich array of concepts to choose from.

Brenda Boyle, founder and head of Skyline, a group of toy designers at IDEO, estimated that on each client project the team generated on average 4000 ideas. Of these 230 were taken forward to the working prototype stage, and of these ultimately 12 were sold and two to three were successful. This made the yield rate only 0.05 - 0.75%.

Design Thinking is about the initial stages of this process: moving from zero ideas to as many as possible, before being able to whittle down which are worth prototyping. Generating large numbers of ideas does not feel efficient but efficiency is at odds with resilience. The more ideas we generate, the more resilient our project will become in the face of disruption and challenges.

A note on brainstorming: watch out for the primal mark. "The content that employees first lay down as they set out to develop creative ideas may act as an anchor that shapes the novelty and usefulness of the ideas they ultimately produce."

PHASE FOUR: PROTOTYPING

We prototype to evaluate which ideas we should move forwards with, with the mindset that we only want to devote enough resources to each prototype to be able to move to the next step. If we prototype in a lowresolution way in these early stages, we are able to incorporate feedback at the lowest cost. Additionally, the later you wait to share prototypes the more we want others to approve of it and may become defensive of feedback. Research shows that when people undertake parallel prototyping (working on more than one at a time) they "produce higher-quality, more diverse work and experience an increase in self-efficacy".

The Two-Hour Experiment

By introducing a time restraint, this tool reserves resources in the early stages of focus on a product or promotion prototype. A product prototype is testing feasibility, and a promotion prototype is testing desirability.

For example, Stanford students were tasked with increasing green spaces in San Francisco. In the two-hour experiment template, designers are asked to identify:

- One idea most likely to accomplish your gamechanger
- A product or service name
- One key function (to learn more about)
- The target customer
- The intended impact

The Stanford students recognised that in the city you could feasibly take over a parking space and turn it into a green area through which to test desirability. They created these small spaces for two hours at a time and gained data from those who came to sit down with them. From this they developed both explicit and tacit knowledge with which to move forward their project. It is now a city programme called Public Parklets in which residents can submit their ideas for a tiny park to be funded and brought to life.



Day 1 and Day 2 recordings also available.

DAY 3 SLIDES CAN BE ACCESSED HERE. FEATURED WORKSHEETS HERE.

PHASE FIVE: TESTING

The final phase in the Design Thinking process is testing. Testing revisits the Empathy phase, but this time with a prototype. In testing, you are asking the same sorts of questions: Who is affected by this challenge? Which group do I want to prioritise? Who is the extreme user, and how do I get proximate with them? However, now that you have a prototype to share, the dynamic of the conversation will change.

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What makes a good test? Real user experience – this is the key to eliciting both analytical and emotional responses. You want to bring the experience to life – invite testers into the interactive world in which your prototype exists. This helps create the posture of 'learning as we go'.

The goal of testing is to learn about how people respond to the prototype – how does it resonate with people? Design is how it works, how it looks, *and* how it feels for the users. Testing in an interactive way (set the scene, have roles, use props) pulls in the people who are going to use your idea, to become co-creators with you. They are helping you shape the solution.

Testing requires that you:

- Engage users with the experience
- Notice surprising decisions, awkward pauses, facial expressions...
- Follow-up by asking about the things you notice
- Seek stories about another time the user felt or behaved this way.

Importantly, testing is a cyclical, not a linear process.

Design Thinking and Organisation Design

There has been a shift in how we apply Design Thinking in recent years, driven by a desire to leverage the concepts and practices of Design Thinking for internal processes.

In other words, how can we apply the tools of Design Thinking used for the development of products and services – team work, radical collaboration, experiential learning, navigating ambiguity – to the internal? How do we use these to design for organisational change?

How do we create room for risk? How do we become intentional about who is working together and how? How do we frame mistakes as learning, rather than something to be avoided?



As with Design Thinking for products and services, we must apply the principles at the levels of I, We, and It.

- I: Exponential Leadership Learning not only to unlock your own creativity, but to enable it in others
- We: Adaptive Teams Using a Design Thinking approach for rapid problem-finding, problem-framing and problem-solving
- It: Resilient Organisations enabling internal ways of working that consistently lead to innovative outcomes

A key insight for organisations is that the more efficient you are at something, the more vulnerable you are, so it's critical to build resilience into your organisation by creating room for experimentation. You want to be efficient in the core while resilient for the future – building the ability to try new things, and creating a culture that allows the organisation to do that consistently.

Creating Intention Around Doing Things Differently

Communication

Communication is the foundation of the way we work together; if we understand each other, we're going to have a baseline we can build on. And if we do not understand each other, we are stuck and cannot build until we reach that understanding. Shared language is the basis of understanding. We must ensure that our definitions match, which requires being explicit about the language that we use, especially in the early stages of a project.

Watch out for:

- 1. Using the same words to mean different things (for example, 'innovation')
- 2. Using different words to mean the same thing (for example, empathise and understand)

Keep in mind that:

- Language may not resonate with people in their context the way it resonates within your team. Remember that people outside your team are new to this, they have fewer details, and they don't care about it in the same way as you.
- Misunderstandings slow you down and can cause problems later in the process. Embrace the beginner's mindset – spend time talking about what you mean, don't make people feel incompetent that they don't know.
- Diversity in teams makes shared language even more important – we assimilate or alienate through language. Always ask: What does this mean to newcomers? To external people that we are trying to entice? To the behaviour we're trying to incentivise?

- Things are happening much more quickly that we can adapt to them. Fatigue and resistance to change can set in because of this gap. One way to bridge this gap is to work fast, and one way to work faster is to have a foundation of shared language.
- Language is like the furniture of an organisation it's one of the most powerful levers we can use to collaborate and to work more efficiently and effectively.

Incentivising Communication for Organisational Change

Justin shared Conway's Law, which states that the way you work together internally directly impacts who you serve externally, and how you reach and resonate with them. For example, if a news reporter isn't working closely with a photographer, the photo might not be the best possible complement to the story.

Part of a designer's job is to help people in the organisation make these connections. A more equitable way of working together is achieved by building trust and understanding so that different people can come together to work in different ways to create different things. Who talks to whom and how they work with each other impacts what we create and how it's delivered. A designer wants to connect people across disciplines and give them a way of working together, to enable new outcomes. It's not about creating a matrix structure; it's about facilitating trust and the ways of communication inside such a structure.

The Ambidextrous Organisation

Justin spent some time discussing the ambidextrous organisation. The ambidextrous organisation must balance the core with the new.

The core is about **exploitation** – plan, execute, repeat. In the core, problems are framed with a noun. There is less appetite for risk. Leadership is hierarchical (command and control), and problem solving, incremental change, and efficiency are emphasised.

The new is about **exploration** – generate, incubate, and scale. In the new, problems are framed with a verb. There is higher tolerance for risk. Leadership is emergent (learn as we go), and problem finding, transformational change, and resilience are emphasised. The new is cyclical; it is a place for generating new possibilities and knowledge that inform decisions and creations.

Different capabilities are required to exploit and to explore. Therefore, we need to be intentional about our focus at the outset.



As we start to articulate behaviours that allow us to work with intention on core and new, we can align our people / teams / ways of working to the project. In other words, by articulating intent, we can align ways of working to make maximum use of that intent.

Design Thinking is really useful in the new (while silos can actually be useful in the core, as people have the same language and skills).

Keep in mind that:

- It's better to give people the opportunity to work in both the core and the new. This builds capability, and avoids creating resentment.
- It's useful to have an episodic approach otherwise the new tends to get sacrificed to the core.

Emergence

Justin closed the workshop by discussing the purpose of Design Thinking in the context of emergence.

Emergence is a way that complex systems and patterns arise out of a multiplicity of relatively simple interactions. We apply Design Thinking principles because we want to create a culture that is emergent – where the evolution of the organisation comes from within the organisation.

The Industrial Age accelerated a command-and-control approach – think assembly lines and hierarchy. But that is the past.

We are now in the Digital Age. Technology enables emergent systems. It accelerates individual choice, so that it becomes less about people coming to us for things, and more about how we get into the flow of people's lives.

Are we communicating hierarchically to connect with people in an emergent system? That's problematic. We need emergent ways of working for an emergent system and market.

DESIGNING FOR AN EMERGENT SYSTEM:

- 1. Break things up
- 2. Identify the independent pattern
- 3. Articulate local behaviours
- 4. Replicate what's working

We are not prescribing outcomes; instead we are incentivising local behaviours that when replicated out have a macro effect on the organisation. Innovative outcomes emerge from behaviours.

DESIGNING ROUTINES TO AFFECT CULTURE

Justin introduced the **ARC Framework**, which uses a company's internal architecture and routines to design for organisational culture.

- Architecture is the 'relationship' structure of an organisation. It includes formal and informal reporting, responsibilities, power structures, and recruiting and compensation.
- Routines are the procedural parts of an organisation – the jobs that are carried out every day. Routines are critical for wellbeing because they define a company's response to daily business. However, routines can also generate habits that may impede company growth, especially during times of change.
- Culture is the mission, values and beliefs of individuals within the company in regards to the company. It answers the questions, 'Why do I do this work?' and 'Why do I work here?'

We can introduce new architecture or routines to impact organisation culture. The ARC Framework helps users think through what type of culture they want to create (for example, one that encourages trust, agency, accountability), and then what types of routines and architecture will facilitate that. For example, if you want to build self-confidence into a culture, you might start by introducing a routine where people present summaries of their work to peers, then build a community of practice to share knowledge and capability across the wider organisation.



educator and creative leader specialising in design and organisational culture. He has led innovation engagements for Global 500 and other organisations including Facebook, Google, PepsiCo, The United Nations, the U.S. Department of State and the World Economic Forum. He also teaches at the Stanford Graduate School of Business and globally with Duke Corporate Education. Justin is the founder of the Professional Fellowship Program at the Institute of Design at Stanford University, where he leads strategic partnerships and teaches graduate courses in design thinking and organisation design. Prior to this, Justin was a career journalist.

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