

**Brief Summary
of
Continuous Discovery Habits**
Discover Habits that Create Customer Value and Business Value

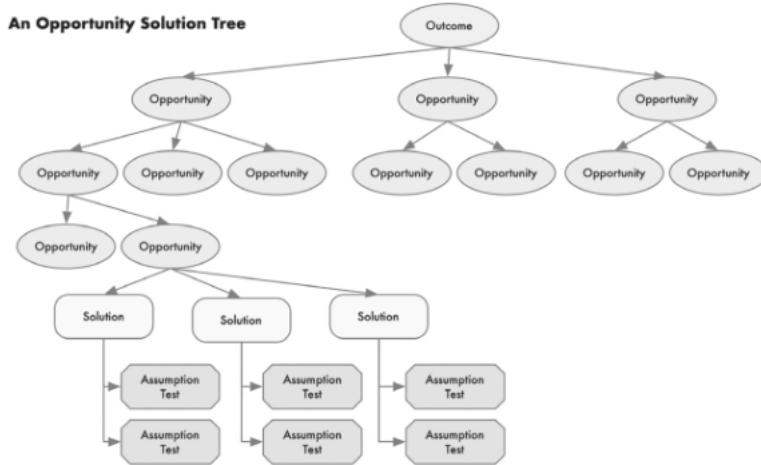
By Teresa Torres

- All product teams do a set of activities to decide what to build and then do a different set of activities to build and deliver it – the former is referred to as discovery and the latter as delivery
- Many companies put much emphasis on delivery – on time, on budget, while neglecting discovery
- Discovery is not a onetime activity – a digital product is never done
- Typically, for long, discovery was not done by the product team- discovery was a onetime activity where in an annual budgeting process projects with fixed deadlines were assigned to engineering teams. In some cases, a product manager translated business needs to product requirements and handed it over to engineering teams
- It was only in 2001, the Agile manifesto advocated for shorter cycles with frequent customer feedback, working at sustainable pace and more importantly respond to customer feedback quickly and easily
- With Scrum and Kanban picking up momentum, though the delivery cycles were 2-3 weeks, the business continued to work on an annual budgeting cycle effectively making true flexibility impossible
- Teams continued to be measured by what they delivered, not whether any one used it or created any value for the customer
- It was much later when teams worked on frequent releases, improvements in usability testing, that leaders realized how to measure when a feature released was not used or a product in the portfolio was never bought – that the decision making on what to build moved from business to product.
- Instead of validating ideas with the customer at the end of discovery, product started co-creating with customers from the beginning.
- Nowadays we find many teams engaging with customers on a regular basis – combining the team's knowledge of what is technically possible with the customer's knowledge of their own needs, pain points and desires to build better products.
- Most products today are conceived, designed, built and delivered by a cross functional team of product managers, designers and software engineers – often referred to as the *Product Trio*. Product managers bring in the business context, designers bring in visual and interactive systems design, and the software engineers ensure that the product is reliable, stable and delivers on promise
- The prerequisite mindsets that must be cultivated to successfully adopt the discovery habits are
 - Outcome oriented – start thinking in outcomes rather than outputs, the value it creates for the customers, and impact it has on their lives
 - Customer centric – the customer at the center of the universe - the purpose of business is to create and serve a customer

- Collaborative – embrace cross functional nature of product work where the Product Trio makes team decisions leveraging the expertise and knowledge of every one in the group
- Visual – it is about going beyond the spoken / written word – into visualizing, drawing, mapping what you know
- Experimental - develop an experimental mindset, identifying assumptions and gathering evidence
- Continuous – evolve from a project mindset to a continuous mindset – encouraging discovery throughout the development process that will delight customers
- Continuous discovery is about having frequent touch points with the customers by the team building the product where they conduct small research activities in pursuit of a desired outcome

Chapter 2 – A common framework for continuous discovery

- Moving from an output to an outcome mindset, the focus is being shifted to the impact the product / features have on both customers and on the business
- The Product Trio needs to engage with the customers, do the work required to truly understand the customer's context, and focus on creating value for the customers
- Identifying the best path to the desired outcome calls for looking at *wicked problems* – which are ill structured and are defined by having many solutions. Much of the work in tackling an ill structured problem is by framing the problem itself. E.g .in the Well Fargo case, the leadership framed the problem as “grow customer accounts at all costs” – which opened the door to cheating
- If Product Trios want to pursue business value by creating customer value, they would need to frame the problem in a customer centric way – discover and address the customer needs, pain points and desires (collectively called *opportunities*) that would drive the business outcome
- Two steps for the Product Trio to reach the desired outcome are
 - How the opportunity space and structure is mapped out
 - How to select the opportunities to pursue
- Discovery starts with defining a clear outcome – that sets the scope for discovery. Next is to discover and map out the opportunity space, after which comes problem framing – which opens up the solution space and finally discover solutions that will address those opportunities and drive the desired outcome
- Opportunity Solution Trees are a simple way of representing the paths one might take to reach a desired outcome



- The root of the tree is the desired outcome – the business need. Opportunity space is the needs, desires and pain points which if addressed, will drive the desired outcome. Next is the Solution space where we depict the solutions we explore and finally the assumption tests – how we evaluate which solutions will help us best to create customer value in a way that drives business value
- Opportunity Solution Trees help Product Trios to
 - Resolve the tension between business needs and customer needs
 - Build and maintain a shared understanding of how they might reach the desired outcome
 - Adopt a continuous mindset
 - Faster learning cycles and better decision making
 - Build confidence in knowing what to do next
- Good discovery does not prevent us from failing, it simply reduces the chances of big failures

Chapter 3 – Focus on Outcomes over Outputs

- Product teams often have to do some discovery work to identify the connections between product outcomes (metrics they can influence) and business outcomes (metrics that drive business)
- Managing for outcomes have been the focus of thought leaders like Peter Drucker, Andy Grove, John Doer and others
- When we manage by outcomes, we give teams autonomy, responsibility and ownership to chart their own paths – in trying to solve a customer problem or address a business need
- Unlike a fixed roadmap, an outcome communicates uncertainty - sending a message that “*we know that we need this problem solved, but we don't know the best way to solve it*”. This uncertainty gives the Product Trio the latitude they need to explore and pivot if needed
- Managing by outcomes communicates to the team how success is measured – a clear outcomes help a team align around the work they should prioritize, choose the right customer opportunities to address and measure the impact of their experiments
- It is important to distinguish between business outcomes, product outcomes and traction metrics.
 - Business outcomes measure how well the business is progressing – often are lagging indicators – e.g. financial metrics (Revenue, costs etc) or could be strategic initiatives.

- A product outcome measures how well the product is moving the business forward – typically assigned to Product Trios which increases their sense of responsibility and ownership
- A traction metric measures usage of a specific feature of workflow in the product – improving a traction metric is an optimization challenge not when you intend to discover new solutions
- Setting a team's outcome should be a two-way communication between the product leader (VP, Chief Product officer) and the Product Trio.
- It is critical that the product leader only talks about the appropriate product outcome for the Product Trio to focus on – instead of dictating solutions
- Common goal setting advice encourages us to set specific measurable, achievable, relevant and time bound (SMART) goals which helps to create focus and inspire effort
- However, recent research shows that setting very challenging goals can decrease performance if the team does not have strategies to achieve the goal. Encouraging teams "to do their best" was a better option and more effective than setting these challenging goals.
- Setting an initial learning goal (discover strategies that might work) was more effective than setting a performance goal
- Product Trios tend to fall into four categories with respect to setting outcomes
 - They are asked to deliver outputs that don't work towards outcomes
 - Their product leader sets the outcome with little input from the team
 - The Product Trio sets their own outcomes with little input from the product leader
 - The Product Trio is negotiating their outcomes with the product leaders
- Exploring questions such as the ones below help clarify the need and the outcomes
 - Who is the target customer for this initiative?
 - What business outcomes are we intending to drive with this initiative?
 - Why do we think this initiative will drive the outcome?
 - What is most important to the business right now?
 - Which customer segment/s are more important than others?
 - What strategic initiatives should the focus be on
- Common Anti-patterns to avoid are
 - Pursuing too many outcomes at once – resulting in spreading ourselves too thin
 - Shifting from one outcome to another
 - Setting individual outcomes instead of Product Trio outcomes
 - Choosing an output as an outcome
 - Focusing on one outcome to the detriment of others

Chapter 4 – Visualizing what you know

- It is good to have a visualization of the experience map from the customer's perspective.
- Start off with the desired outcome e.g. for a company such as Netflix answering a question initially such as "increase the average number of minutes watched" to a more broader question of "How do customers entertain themselves today"
- It is preferred to start individually to avoid groupthink – get each one's perspective first before they work together to develop a shared perspective

- Drawing is a critical thinking tool and helps us in see gaps in our thinking and catch what is missing – it is important to get diverse perspectives of the same problem before exploring them deeper to get a shared understanding
- Once each of the Product Trio get their version of the experience map, the focus next is on to synthesize the work together – by having the individual maps into a collection of nodes and links
- Common Anti-patterns to avoid are
 - Getting bogged down in endless debates on minute details
 - Using words instead of visuals – the more you draw the more you will realize that drawing is a super power
 - Moving forward as if your map is true – a draft could go through multiple refinements before we take the next step in the process
 - Forgetting to refine and evolve the map as you learn more – continuously synthesize what you collectively know and have a shared understanding of customer context

Chapter 5 – Continuous Interviewing

- Steve Jobs “People don’t know what they want until you show it to them” - customers don’t always know what they want
- The purpose of customer interviewing is not to ask your customers what to build – to discover and explore opportunities – these are the needs, pain points and desires.
- Research shows that interview participants struggle to answer direct(factual) questions accurately. Direct questions require that we recall facts without context – and this is prone to cognitive biases
- If you want to build a successful product, you need to understand your customer’s actual behavior – their reality not the story they tell themselves
- Too often in customer interviews – we ask direct questions “what criteria do you use while purchasing a pair of jeans” or “How often do you go to the gym” – these type of questions invoke our ideal selves and encourage our brains to generate coherent but not necessarily reliable responses
- The key to interviewing well is to distinguish what you are trying to learn (your research questions) from what you ask in the interview (interview questions)
- In any interview, it is critical to balance broadly exploring the pain points, desires and needs that matter most to the customer and diving deep on the specific opportunities that are most relevant to you
- Our primary research question in any interview should be “what needs, pain points and desires matter most to the customer”
- Instead of asking “what criteria do you use when purchasing a pair of jeans” – we could ask “Tell me about the last time you purchased a pair of jeans” – this will help uncover what criteria our participant used while purchasing one
- You might want to tailor the scope of the question based on what you need to learn at the moment – a narrow scope will help you optimize your existing product and broader questions help uncover new opportunities
- Once you complete interviewing customers, it is good to create an interview snapshot in one page to help you synthesize what you learnt – these will be useful to act as a reference later



- The photo and the memorable quote will act as keys to help you remember the stories you heard from the participant
- If the participant requests a specific feature or solution, ask about why they need it and capture the opportunity – you could ask “if you had that feature, what would that do for you?”
- The benefit of capturing the need and not just the solution is that the need opens up more of the solution space
- Common Anti-patterns to avoid are
 - Relying on one person to recruit and interview participants – what if he goes on vacation or is sick?
 - Asking whom, what, why, how and when questions – instead ask research-based questions – “tell me about a specific time when ...”
 - Interview only when you think you need it – continuous interviewing ensures that you stay close to your customers
 - Sharing what you learned by sending you pages of notes / sharing a recording – better to share a snapshot / summary of your interviews
 - Stopping to synthesize a set of interviews – instead of grouping a set of interviews and summarizing them – get a snapshot ready as soon as one interview is complete

Chapter 6 – Mapping the opportunity space

- As you collect customer stories, you are going to hear about countless needs, pain points and desires. One can see plenty of gaps in customer stories – each gap presents an opportunity to serve the customer.
- A single customer story can elicit dozens of opportunities. As you interview more and more, it will expand the opportunity space and therefore mapping that opportunity space is critical.
- Finding the best path to your desired outcome is an ill-structured problem and requires that we first structure or frame the problem space before we can dive into solving it
- Some teams capture their opportunities in an Opportunity Backlog – a prioritized list of opportunities much like the Product Backlog
- However, when the Opportunity backlog becomes too big, and have quite a few inter-related opportunities in it, an Opportunity Solution Tree could be a better solution in terms of depicting parent-child and sibling relationships

- Breaking down of big opportunities into smaller ones allows us to tackle problems that might otherwise seem unsolvable. Also, it allows us to deliver value over time, by iteratively delivering value
- The Opportunity space helps decompose larger challenges into smaller opportunities – and the experience map and the interview drawings help to a large extent in uncovering the underlying structure
- For each opportunity ask the following questions – and if the answer to these questions is “Yes” – add it to the Opportunity Solution tree
 - Is the opportunity framed as a customer need, pain point or desired and not a solution?
 - Is the opportunity unique to this customer, or have we seen it more than one interview?
 - If we address this opportunity, will it drive our desired outcome
- Going through the various opportunity maps, one could find areas where you could group the opportunities together under a shared parent - one needs to iterate these steps till you have a clear path to the parent opportunity solution tree
- It is important to remember to find a sweet spot between having enough structure to see the big picture and not getting overwhelmed with detail
- Common Anti-patterns to avoid are
 - Opportunities framed from your company’s perspective – and not from the customer’s perspective
 - Vertical opportunities - when you get narrow focused, where we have a parent with only one child, who in turn has only one child – creating a vertical stack. Good to explore the parent to get a broader picture in future interviews
 - Opportunities have multiple parent opportunities – top level opportunities represent distinct moments in time and hence should not have two parents
 - Opportunities are not specific – opportunities that represent themes, design guidelines, or sentiment aren’t specific enough. In such cases, focus on specificity to make a good opportunity
 - Opportunities are solutions in disguise – important to distinguish between solution and an opportunity. E.g., “I wish I could fast forward through commercials” could mean that he “does not like commercials” and so we might ask how might we address I don’t like commercials?
 - Capturing feelings as opportunities – customer expressing emotion in an interview could mean there is an opportunity behind the emotions. Try to understand the cause of these feelings – and that could get to the bottom of what the customer actually needs

Chapter 7 – Prioritizing opportunities not solutions

- Typically, most of our conversations happen in the solution space with product teams talking of shipping the next release, building roadmaps, backlogs etc. Melissa Perri calls this the “build trap”
- It is important to keep in mind that product strategy does not happen in the solution space – it happens in the Opportunity space
- When we work with the Opportunity Solution Tree, we deconstruct large opportunities into smaller ones – and by adopting an Agile mindset and working iteratively we deliver value over time

- Teams assess opportunities based on the following criteria
 - Opportunity sizing – answer questions such as – “How many customers are affected and how often? Which of the opportunities affects the most customers?”
 - Market factors – help evaluate how addressing each opportunity might affect our position in the market – also help in identifying which of those are table stakes and which of those are strategic differentiators
 - Company factors – evaluate the impact of each opportunity for the company, business unit or team
 - Customer factors – evaluate the importance of opportunities to customers – in terms of needs, pain points and desires
- Karl Weick “Wisdom is finding the right balance between having confidence in what you know and leaving enough room for doubt in case you are wrong”
- When assessing and prioritizing an opportunity space, it is important that we find the right balance between being data informed and not getting stuck in analysis paralysis. One can fall into the trap of wanting more data, spending some more time in getting a perfect decision – which often could get counter productive
- Jeff Bezos introduced the idea of Level 1 and Level 2 decisions – a Level 1 is hard to reverse and a Level 2 is easy to reverse. We should be slow and cautious in making Level 1 decisions and move fast while making Level 2 decisions – the metaphor of One way door or Two way door
- It is important that we frame our discovery decisions as a 2 way door – which are reversible. Having a continuous discovery process a 2 way door helps in course correction as we learn
- Common Anti-patterns to avoid are
 - Delaying a decision until there is more data – decide based on what you know today, and move on
 - Over relying on one set of factors at the cost of others – it is important to look at all four sets of factors (opportunity sizing, market factors, company factors and customer factors) instead of looking at just one of them
 - Working backwards from your expected conclusion – have an open mind instead of a definite conclusion in mind – this will give you new perspectives

Chapter 8 - Super charged ideation

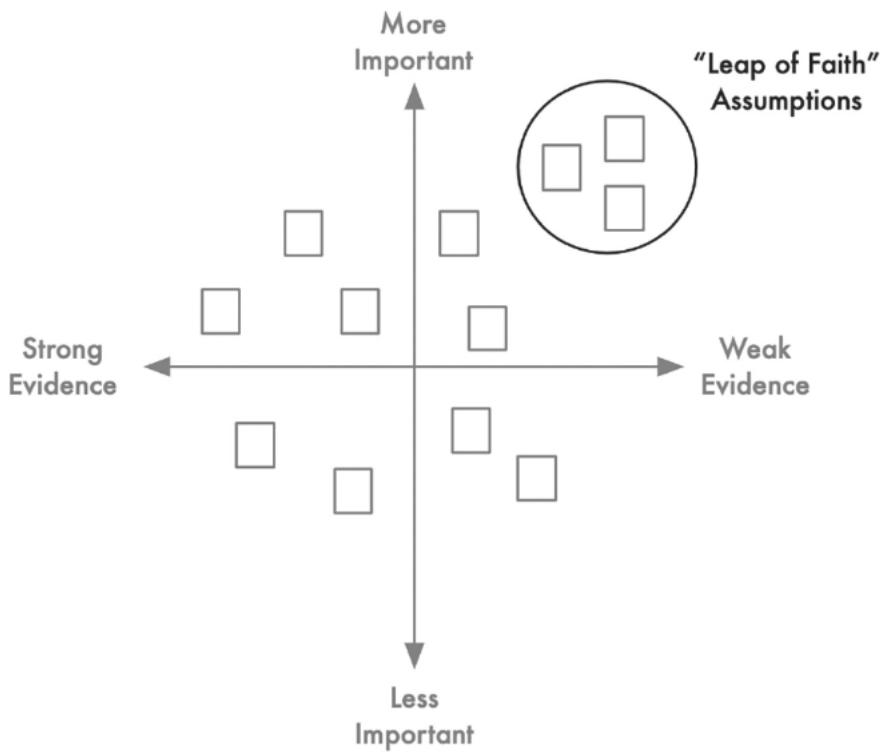
- Getting into ideation leads us into brain storming – and research tells us that our first idea is rarely our best idea. Researchers measure creativity using three primary criteria – fluency (number of ideas we generate), flexibility (how diverse our ideas are) and originality (how novel an idea is)
- The most original ideas are generated towards the end of the ideation session
- We need to push beyond our first mediocre and obvious ideas and delve into the realm of more diverse original ideas
- Alex Osborn who introduced Brainstorming talks of four rules for brain storming
 - Focus on quantity – generate as many ideas as you can
 - Defer judgement and separate idea generation from idea evaluation
 - Welcome unusual ideas
 - Combine and improve ideas
- Other options of generating ideas are individuals generate ideas on their own and share it with the group – other members too get the benefit of hearing others' ideas and improving on them

- If you are stuck on ideas, take a break, a long walk, mull/sleep over it, go wild – will help get over it
- Once you have a good list of ideas, you could use concepts like dot voting – to select the top three ideas
- Common Anti-patterns to avoid are
 - Not including diverse perspectives – get everyone in the team to contribute – the more diverse the group, the more diverse the ideas
 - Generating too many variations of the same idea – sometimes we cling on to an idea and generate more ideas around it and get stuck
 - Limiting ideation to one session – do not expect to have ideas brainstormed and generated by scheduling a 1-hour meeting
 - Selecting ideas that don't address target opportunity – while getting to zero in on ideas, it is important to focus on ideas / solutions that address the target opportunity

Chapter 9 – Identifying hidden assumptions

- Confirmation bias means we are more likely to seek out confirming evidence than we are to see our disconfirming evidence. We tend to pay attention to and remember the data that supports our perspective – and often ignore the data that undermines our perspective
- Escalation of commitment is a bias in which the more we invest in an idea the more committed we become to that idea
- Product teams are particularly susceptible to confirmation bias and escalation of commitment – we tend to fall in love with our ideas.
- Marty Cagan in his book Inspired, talks of how the best product teams complete a dozen or more discovery iterations every week – and is possible because they are stepping away from concept of testing ideas and instead focus on testing assumptions that need to be true in order for the ideas to succeed
- Assumption testing is generally quicker than idea testing and the faster pace helps us to guard against the escalation of commitment
- The various types of assumptions are
 - Desirability assumptions – does any one want it? Will we be able to provide value for it?
 - Viability assumptions – should we build it? Would they be viable for the business to get ROI
 - Feasibility assumptions – can we build it? What is feasible for the business?
 - Usability assumptions – is it usable? Can customers find what they need?
 - Ethical assumptions – is there any potential harm in building this idea?
- One of the best ways to align as a team around ideas is by Story Mapping. It forces you to get specific about how an idea will work and what you expect your end users will do
- To story map ideas
 - Start by assuming the solution already exists
 - Identify the key actors – who needs to interact with whom for the idea to work?
 - Map out the steps each actor has to take for any one to get value from the solution
 - Sequence the steps horizontally over time
- Sometimes story maps can help us uncover viability and ethical assumptions as well

- Another way to help see assumptions is a technique called Pre-Mortem – which happens at the beginning of the project and are designed to map out what could go wrong in the future. “Imagine it is six months in the future, your product has launched and is a complete failure. What went wrong” - generate reasons why your product might fail – and you are exposing assumptions that you idea that depend on it may not be true. “My worst nightmare” – from Innovation games could be an example of Pre Mortem
- One other way to generate assumptions is to use the Opportunity solution tree to work backwards from your solution to your outcome. You can start by generating assumptions using
 - Addressing the target opportunity will drive the desired outcome because ..
 - This solution will address the target opportunity because
- If the desired outcome is a product outcome, we might also need to test the assumptions connecting our product outcome to our business outcome to uncover viability assumptions
- Once we have a list of assumptions, the next step is to prioritize them. Assumption mapping, created by David Bland is a great way to quickly identify your leap of faith assumptions that carry the most risk and needs to be tested
- With assumption mapping, you evaluate assumptions on two dimensions – Importance and Evidence. How much do we know about the assumption? i.e. what evidence do we already have that tell us that this assumption is true or false?



- Mapping assumptions on this grid helps you identify which assumptions are important and the evidence we have or don't have to support it. Assumptions are positioned relative to one another

- Common Anti-patterns to avoid are
 - Not generating enough assumptions – good to have atleast 20-30 assumptions for an idea
 - Phrasing assumptions that you need them to be false – in other words phrasing them negatively - Customers wont remember their passwords
 - Not being specific enough - generic assumptions will not help
 - Bias towards one category at the cost of other categories

Chapter 10 – Testing Assumptions not ideas

- While doing assumption testing, we want to make sure that we compare and contrast our ideas against each other
- It is good to systematically collect evidence about our assumptions which would help us make better decisions
- The goal of assumption testing is to collect data that will help us move the assumption from the right to the left on the assumption map – by gathering more evidence
- A strong assumption test simulates an experience giving the participant an opportunity to behave either in accordance with your assumption or not
- If the simulation is less than optimal, you would need to modify your numbers to accommodate for shortcomings – the key is to design the smallest assumption test that would give you optimal results
- With assumption testing, learning comes from failed tests. And it is the smaller tests which gives us a chance to fail sooner. Failing faster allows us to move onto the next assumption, idea or opportunity. We must also take into account false positives and false negatives while doing assumption testing
- Our goal as a product team is not to seek truth but to mitigate risk. We need to do just enough research to mitigate the risk that our companies bear and no more
- Two tools that must be in every product team's toolbox are
 - Unmoderated user testing – allows you to post a stimulus and define tasks to complete and questions to answer – e.g. similar to running regression tests at night, unmoderated
 - One question surveys – can be used to simulate an experience – and gather more info .. e.g. if you are trying to find out the favourite sports teams – instead of asking them “are you willing to tell us who your favourite sports teams are” – you could ask “who are your favourite sports teams”
- Common Anti-patterns to avoid are
 - Overly complex simulations – design tests quickly and ensure discovery iterations are high
 - Using percentages rather than absolute numbers while defining evaluation criteria – percentages may give a wrong picture if the survey size is small
 - Not defining enough evaluation criteria
 - Testing with the wrong audience – make sure you test with the right people
 - Designing for less than the best case scenario – design tests to learn as much as we can

Chapter 11 – Measuring impact

- An outcome focused Product Trio needs to stay focused on the end goal – driving the desired outcome
- We need to measure not just what we evaluate our assumption tests, but need to measure impact on outcome
- Start by instrumenting what you need to collect to evaluate your assumption tests – and measure what you need to evaluate your progress towards your desired outcome
- Common Anti-patterns to avoid are
 - Getting stuck trying to measure everything
 - Hyperfocusing on assumption tests and forgetting to walk the lines of opportunity solution tree – we need to remember that our goal is to satisfy customer needs while creating value for our business
 - Forgetting to test the connection between your product outcome and business outcome

Chapter 12 Managing the cycles

- It is important not to get bogged down in analysis paralysis when assessing and prioritizing opportunities
- It is important to tackle small opportunities, small changes snowball and could have a big impact later
- Common Anti-patterns to avoid are
 - Overcommitting to an opportunity – there could be opportunities that are important but you wouldn't be able to deliver – the biggest challenge is identifying the right opportunity
 - Avoid hard opportunities – in some cases testing could take a long time – which is infact laying the groundwork for more impact in the future
 - Drawing conclusions from shallow learnings – discovery requires critical thinking skills
 - Giving up before small changes have time to add up – while measuring impact of product changes, it is not one big change, but a series of small changes to move the needle

Chapter 13 show your work

- When we present our conclusions, we tend to focus on the outputs – the roadmap, release plan or the backlog. It is good to share the journey the team took to arrive at those conclusions
- The journey includes showing the opportunity solution tree, the desired outcome, the prioritization of items, the target opportunity, story maps, assumption tests and sharing the solutions generated.
- When we show our work we are inviting our stakeholders to co-create with us. We share our work and invite them to assess our thinking and adding their own
- Common anti patterns
 - Telling instead of showing
 - Overwhelming stakeholders with unnecessary details
 - Arguing with stakeholders why their ideas wont work
 - Trying to win the ideological battle instead of focusing the decision on hand

Chapter 14 – Start small and iterate

- Good to build a trio – product manager, designer and engineer and consult on key decisions and work together to decide what to build
- Continuous interviewing is a key stone habit for continuous discovery – meet customers at least once a week
- When asked to deliver on a specific solution, work backward. Take time to consider “if you customers had this solution, what would it do for them? Try to uncover implied opportunity and use story maps to identify hidden assumptions
- Work with stakeholders to identify the impact they expect to have in a given feature
- Use retrospectives to reflect and improve - Ask “how could we have learned that sooner”
- Common Anti-patterns to avoid are
 - Focusing on why a given strategy wont work – instead of focusing on what is within your control
 - Being the annoying champion for the “right way” of working – there is no one right way to discovery
 - Waiting for permission instead of starting with what is in your control

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