

# Design in Innovation

Early stage interventions



# Design in Innovation

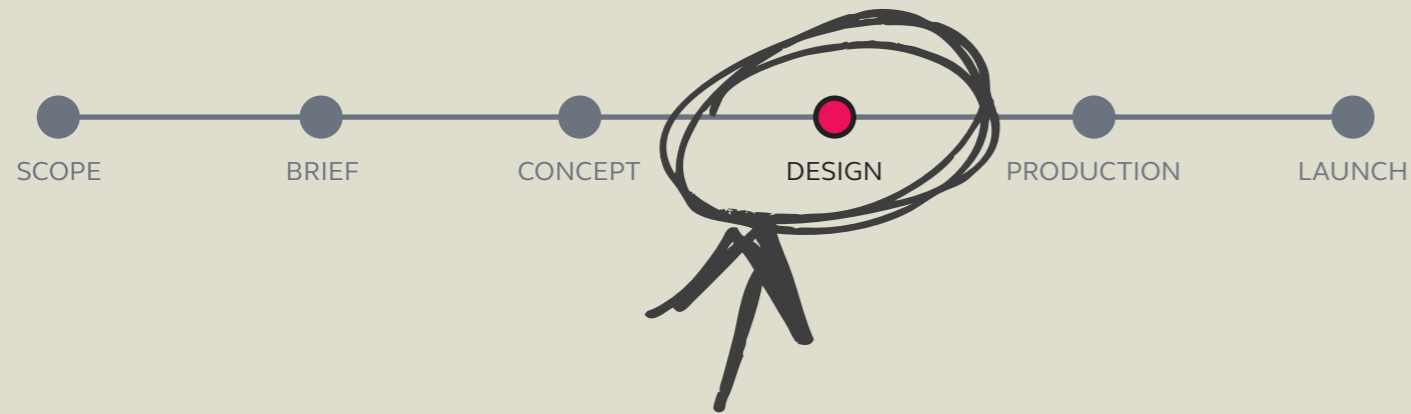
## Early stage interventions

The UK is working within a global economy where it is unable to compete in many areas on cost. Technology innovation is no longer a guarantee for success.

**Design is being recognised as a key differentiator**, affecting the desirability, usability and feasibility of systems, services and products – across all sectors.

The UK is in the premier league of creativity and design boasting a multidisciplinary sector, from strategic design to brand design. According to a Department for Business, Innovation and Skills report, every £1 invested in design provides an average return on investment of £25. There is a huge opportunity for UK companies to increase their use of design in early stage innovation to deliver products and services with increased ‘market pull’ and improved social, economic and environmental impact.

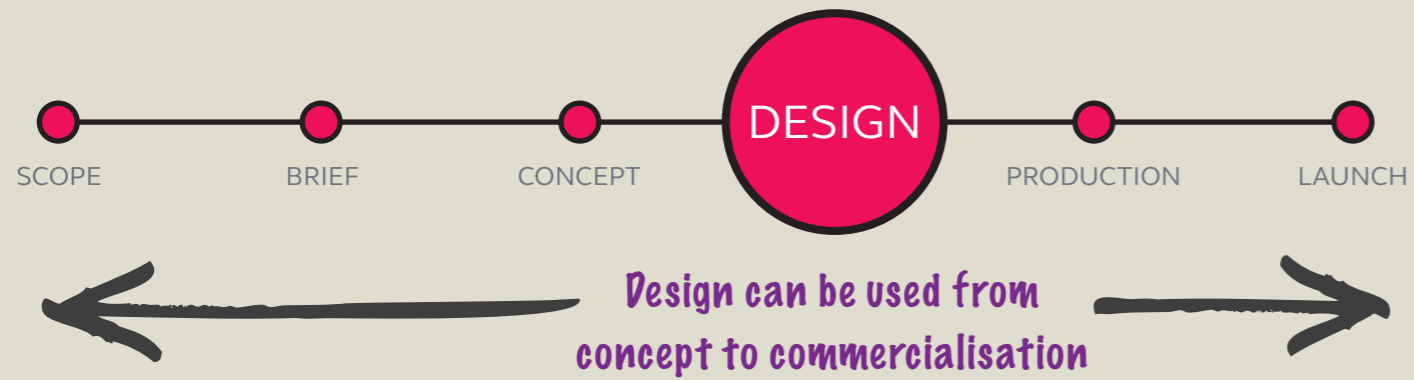
The Knowledge Transfer Network has been exploring how design can be used in innovation and what is needed to create the best environment for design to deliver high value. This guide provides shares these insights and aims to support ongoing dialogue between designers, technologists and innovators to successfully realise the opportunity.



*Design is often considered late  
in a typical development process*

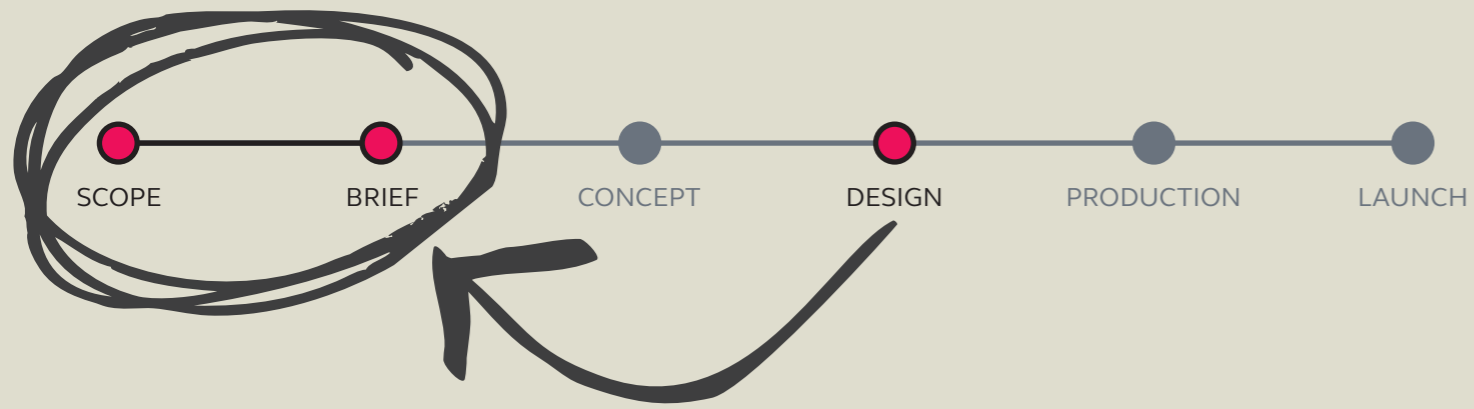
**Design is often considered late in the innovation process**, if at all, and many organisations fail to capitalise on the benefits it can provide.

Whilst design is often associated with creating the look and feel of a product, many organisations are unaware that design can also be used strategically, for example: to develop systems, improve services, build in sustainability and create new approaches to collaboration for social, economic and environmental aims.



**Design is a powerful tool** when used effectively throughout the entire life of an innovation project – from concept all the way through to commercialisation.

It can lead to time and cost savings and better project outcomes, especially when embedded early in a project's life cycle.



*Design is highly effective  
when used to scope the brief*

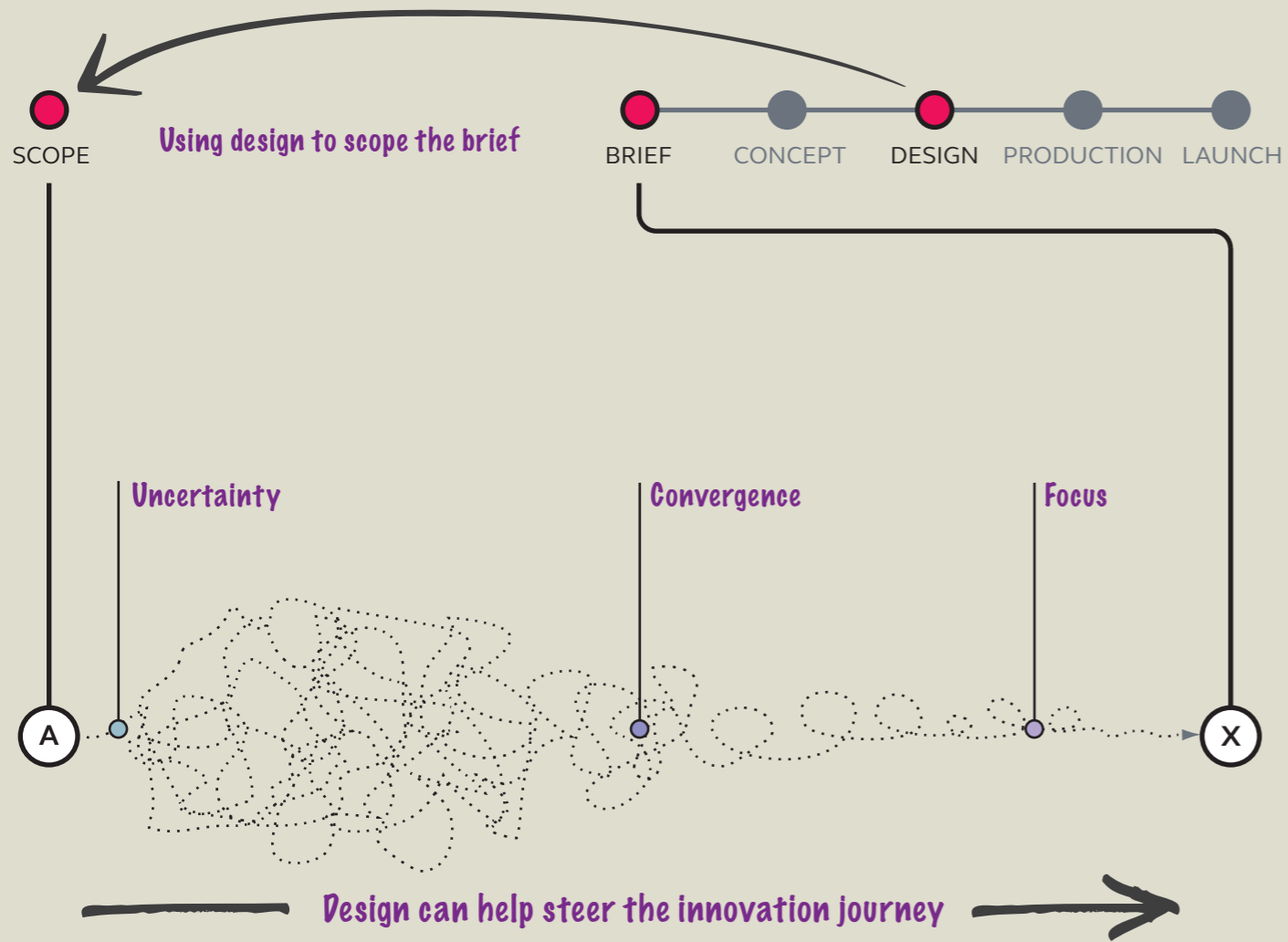
**Design is a 'creative methodology'** that uses a range of hard and soft skills, from analysis and systemic thinking, to human insight and empathy.

Using design to scope the brief can help businesses and organisations identify genuine market opportunities, rather than delivering “solutions looking for a problem”.



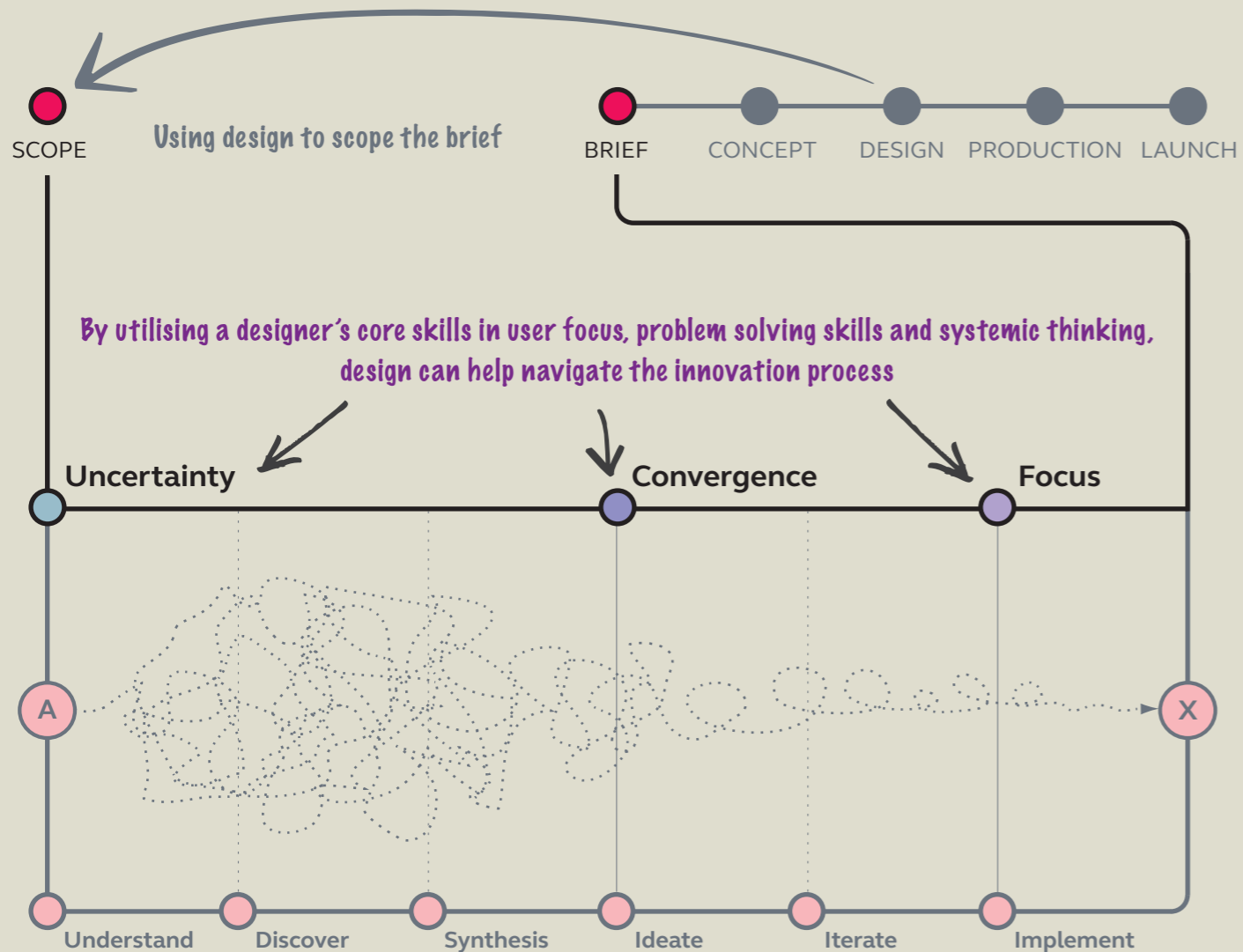
There can be an expectation that innovation is a clear path from A to B.

But in reality the path to innovation is often obscured and confusing. There are many potential barriers that can disrupt and even stop progress.



Used effectively in the right environment, **design can help steer the innovation journey**, enabling effective convergence and focus.

Design can help identify genuine economic, social and environmental opportunities with viable market pull, and prevent the development of products and services which simply do not meet a need.



## Creating the best environment for design in innovation to deliver high value

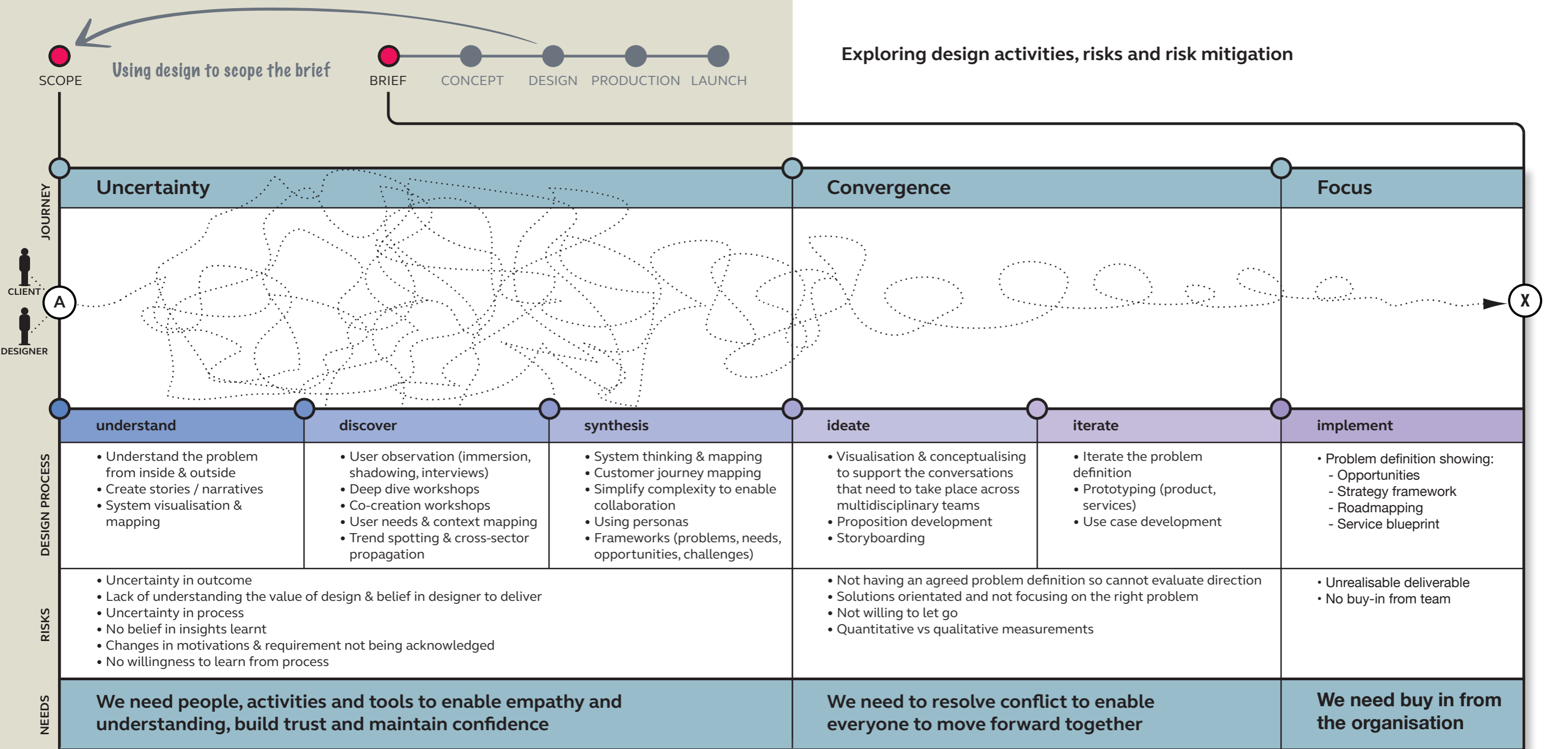
Communication, trust and other “intangibles”, often seen as nice to have or secondary to the more currently valued “hard” skills, are central to the successful use of design in innovation.

Failing to invest the necessary time and resources risks missing out on the benefits of taking a design approach.

The diagram on the following pages maps some of the design activities that can support successful innovation, looks at risks associated with these activities, and highlights what is needed to overcome these risks.



Exploring design activities, risks and risk mitigation



SCOPE → BRIEF → CONCEPT → DESIGN → PRODUCTION → LAUNCH

Using design to scope the brief

Uncertainty

Convergence

Focus

JOURNEY

CLIENT  
DESIGNER

A

X

DESIGN PROCESS

understand

discover

synthesis

ideate

iterate

implement

- Understand the problem from inside & outside
- Create stories / narratives
- System visualisation & mapping

- User observation (immersion, shadowing, interviews)
- Deep dive workshops
- Co-creation workshops
- User needs & context mapping
- Trend spotting & cross-sector propagation

- System thinking & mapping
- Customer journey mapping
- Simplify complexity to enable collaboration
- Using personas
- Frameworks (problems, needs, opportunities, challenges)

- Visualisation & conceptualising to support the conversations that need to take place across multidisciplinary teams
- Proposition development
- Storyboarding

- Iterate the problem definition
- Prototyping (product, services)
- Use case development

- Problem definition showing:
  - Opportunities
  - Strategy framework
  - Roadmapping
  - Service blueprint

RISKS

- Uncertainty in outcome
- Lack of understanding the value of design & belief in designer to deliver
- Uncertainty in process
- No belief in insights learnt
- Changes in motivations & requirement not being acknowledged
- No willingness to learn from process

- Not having an agreed problem definition so cannot evaluate direction
- Solutions orientated and not focusing on the right problem
- Not willing to let go
- Quantitative vs qualitative measurements

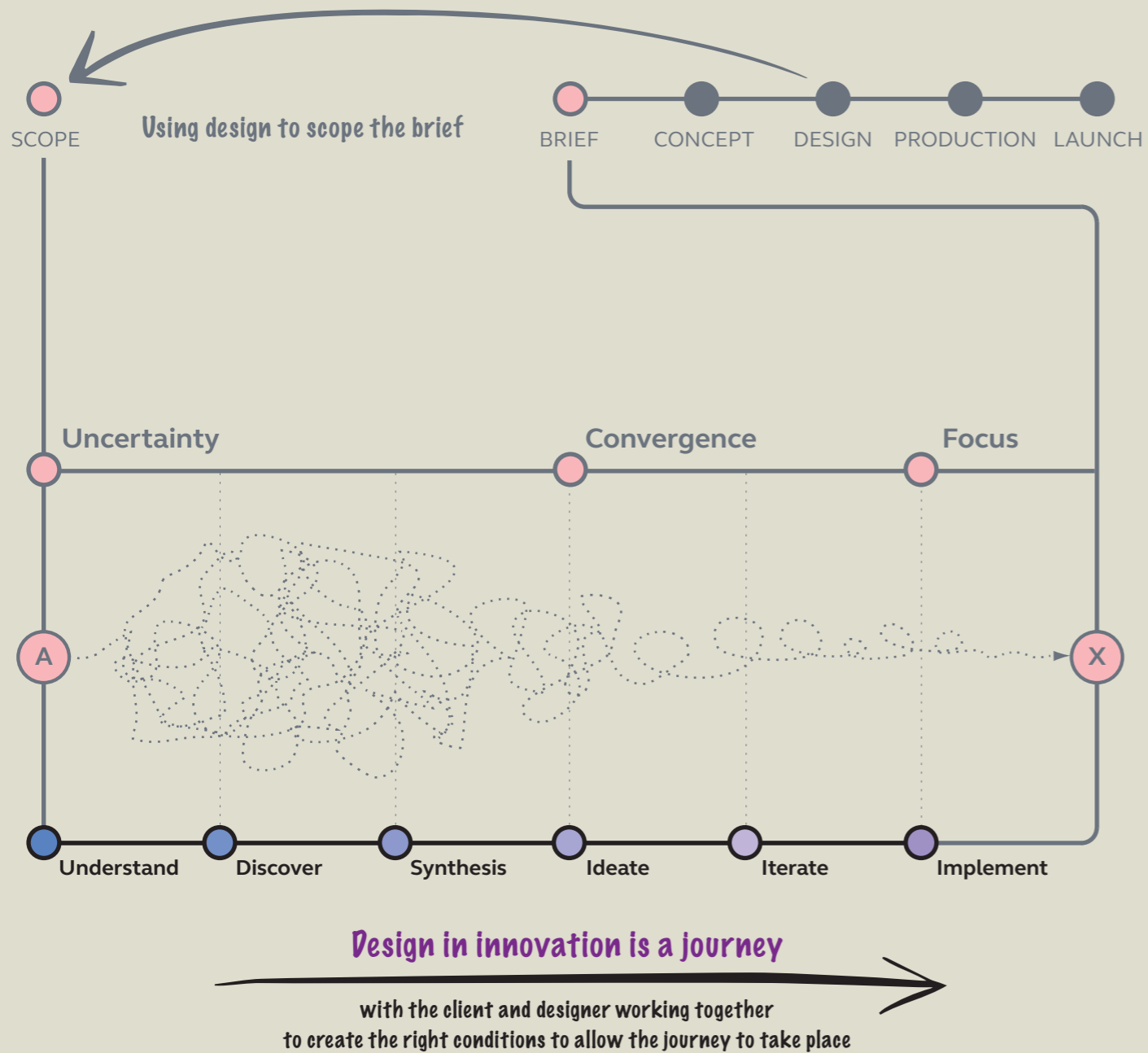
- Unrealisable deliverable
- No buy-in from team

NEEDS

We need people, activities and tools to enable empathy and understanding, build trust and maintain confidence

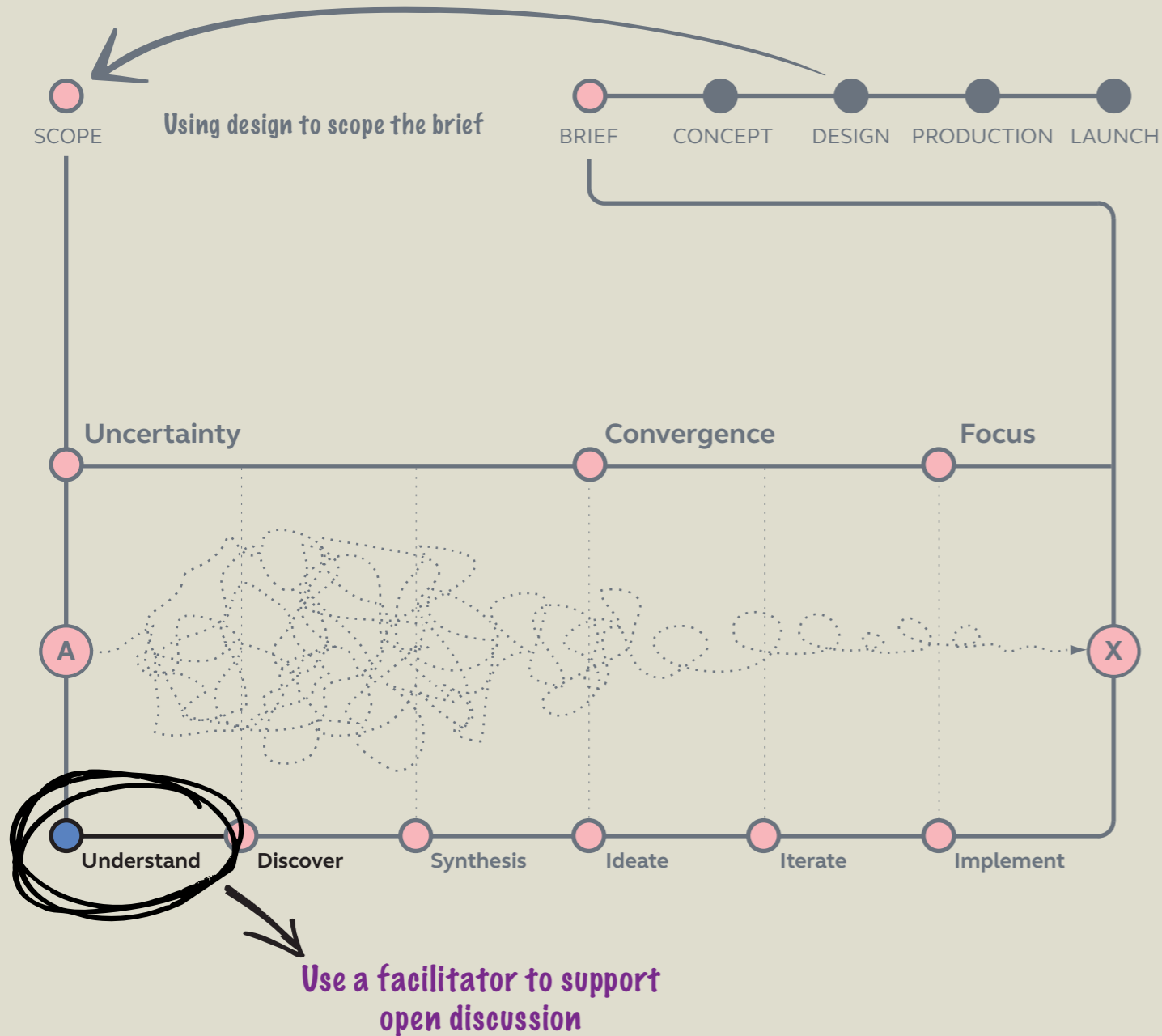
We need to resolve conflict to enable everyone to move forward together

We need buy in from the organisation



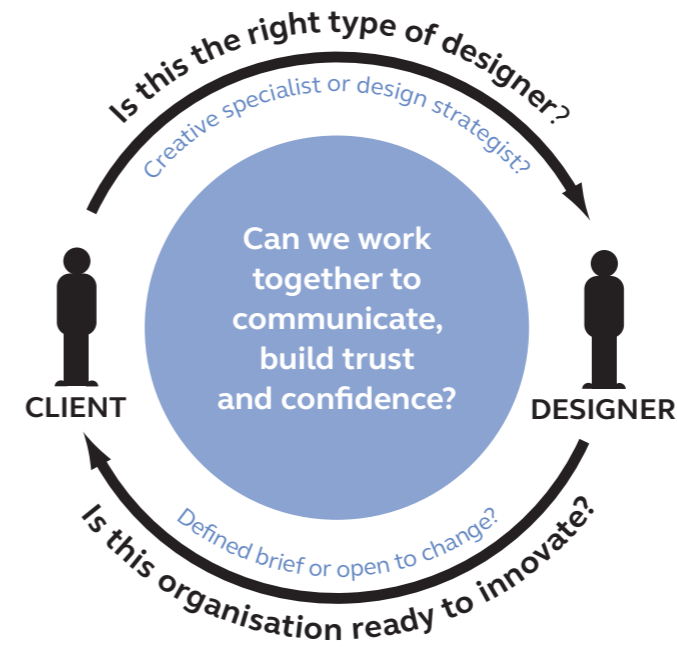
## What attitudes & resources are needed to enable design to support successful innovation?

The following pages look at a series of questions to help explore how best to capitalise on design in innovation across the range of sectors and organisations supported by Innovate UK.



### Are the right values, expectations and skills in place?

From the start of the project it is important the client and designer are completely transparent about their expectations, motivations and needs. **A facilitator can help support this process.**



#### Does the client have:

- Senior level buy in?
- A design champion?
- The right culture to accept new ideas and change?
- The money, time and permission to invest in design?
- The right attitude to metrics to support design in innovation? Don't constrict innovation by measuring up front: measure outputs

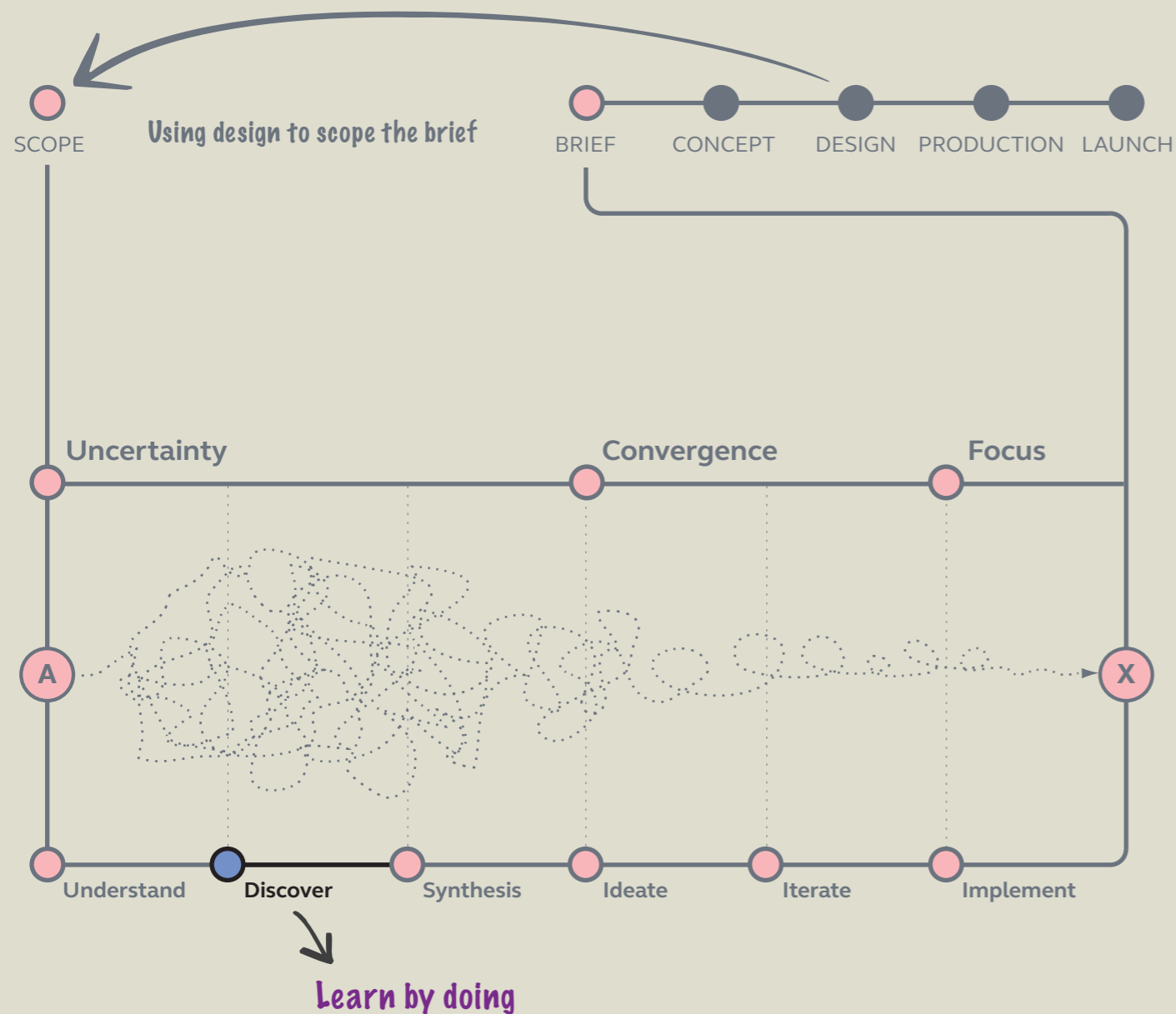
#### Does the designer have:

- Understanding of the environment the client is working in e.g. time, money, people, values and expectations?
- Suitable credentials and relevant experience?
- Ability to communicate in a way the client can relate to?

#### EXAMPLE RESOURCES

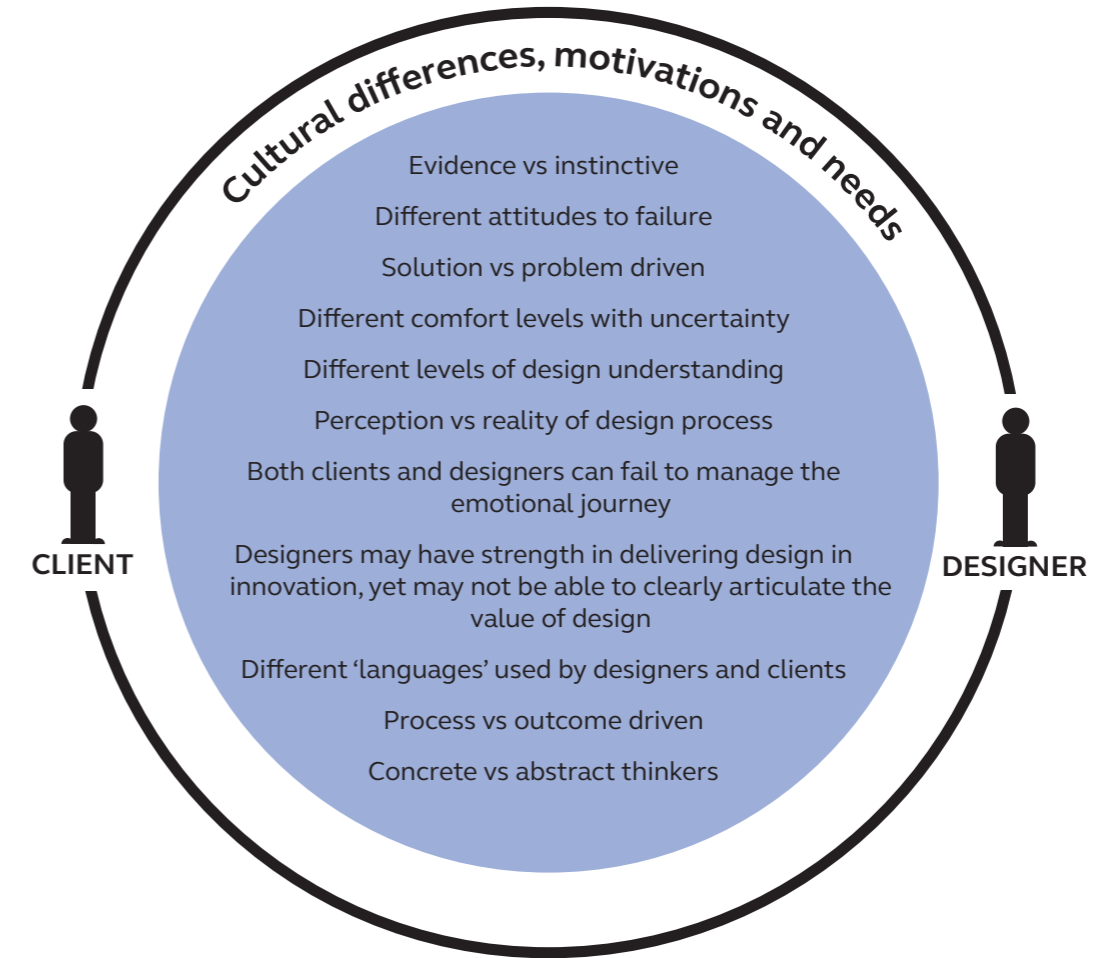
- Case studies
- Designer credentials
- Portfolio tool
- Example briefs
- Background briefing document
- Project initiation document
- Client design facilitator to support communication between client & designer

*What else?*



### Are the client and designer able to acknowledge differences?

When clients and designers come together there can be a collision of disparate cultures. Clients and designers will often have differences in motivations, expectations and needs.

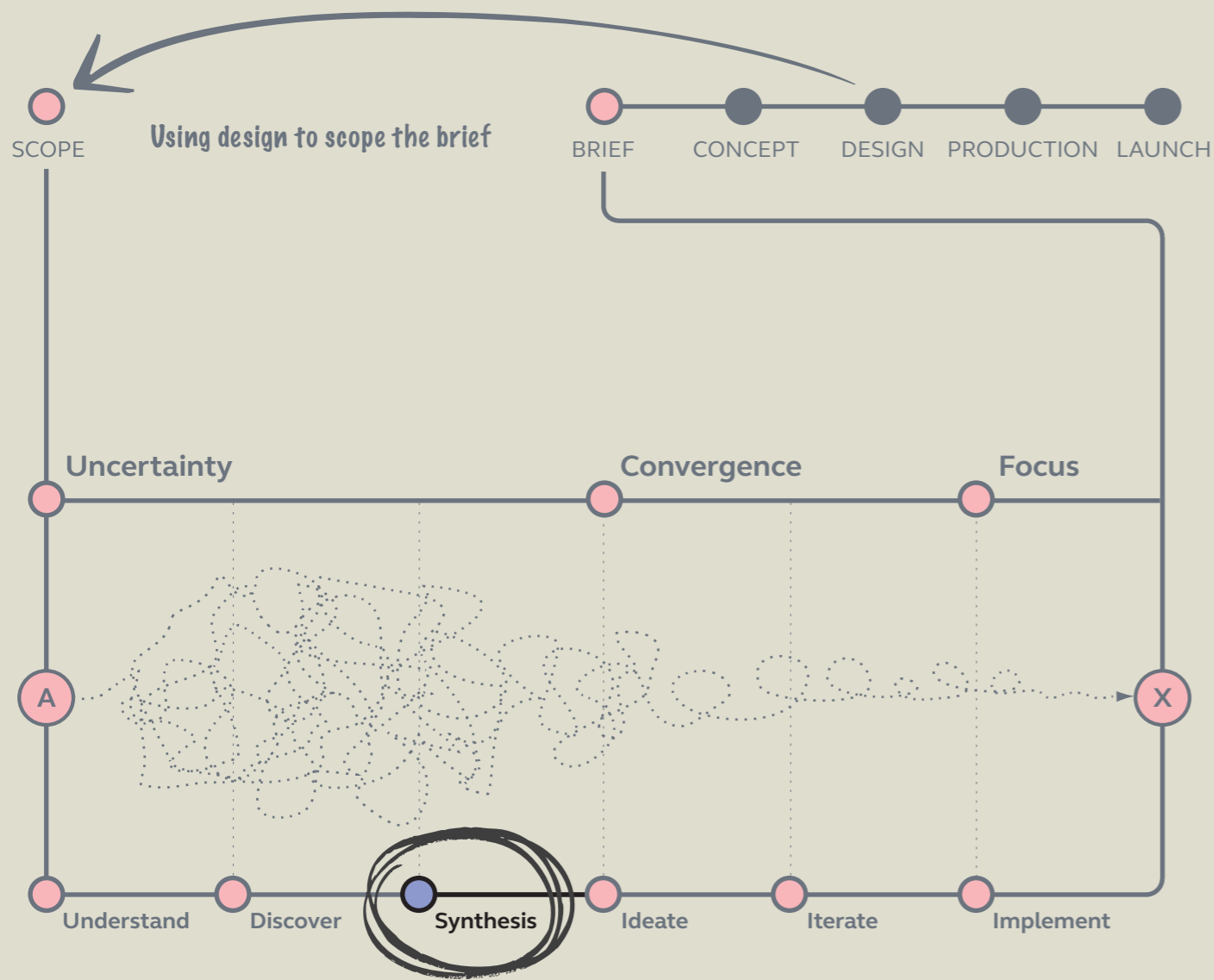


Different attitudes within individuals are relative to their experience and context. Some are hard-wired and will just need to be accepted; others can change through experiencing the process. **Learning by doing is key to a transformational process.**

EXAMPLE RESOURCES

- Client design facilitator to bridge perspectives
- Time for open conversations on expectations and values
- Document outlining agreed approach

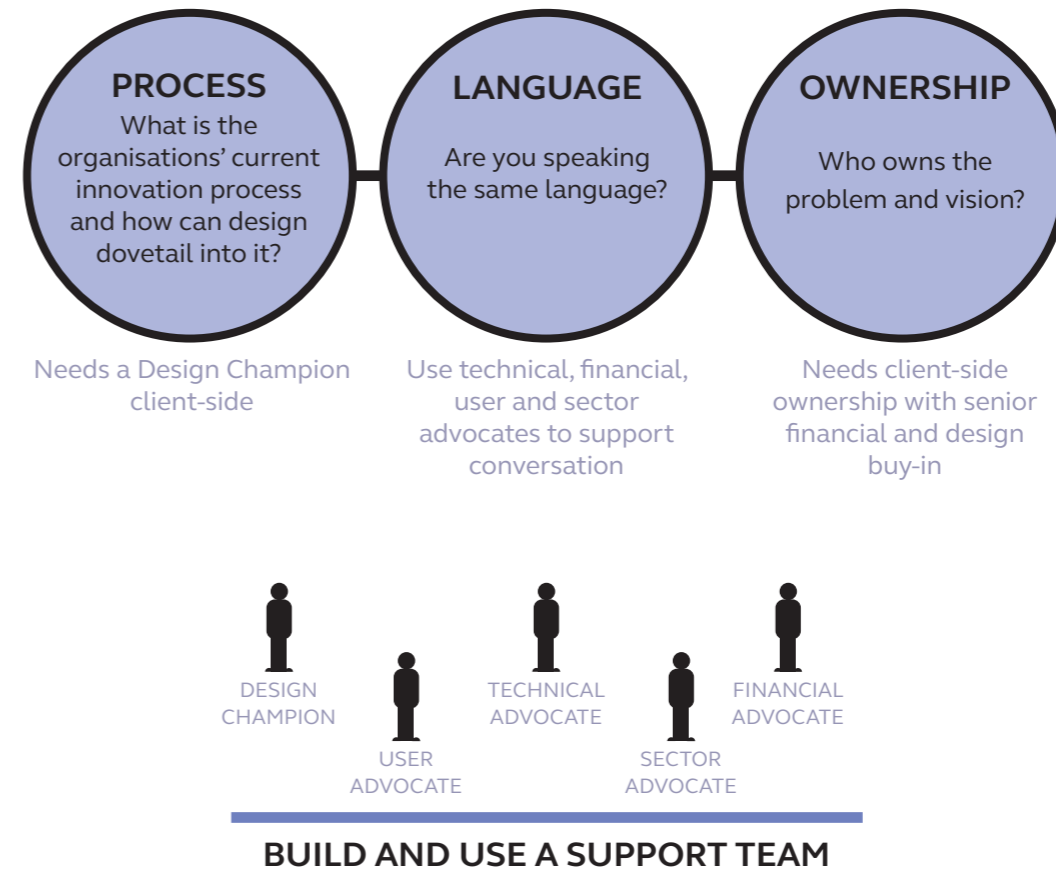
What else?



### Have the client and designer established a shared understanding?

Innovation can impact every part of a business. It is essential to build a solid platform of understanding from which to work, and have the right people in place from across the business to support any required change.

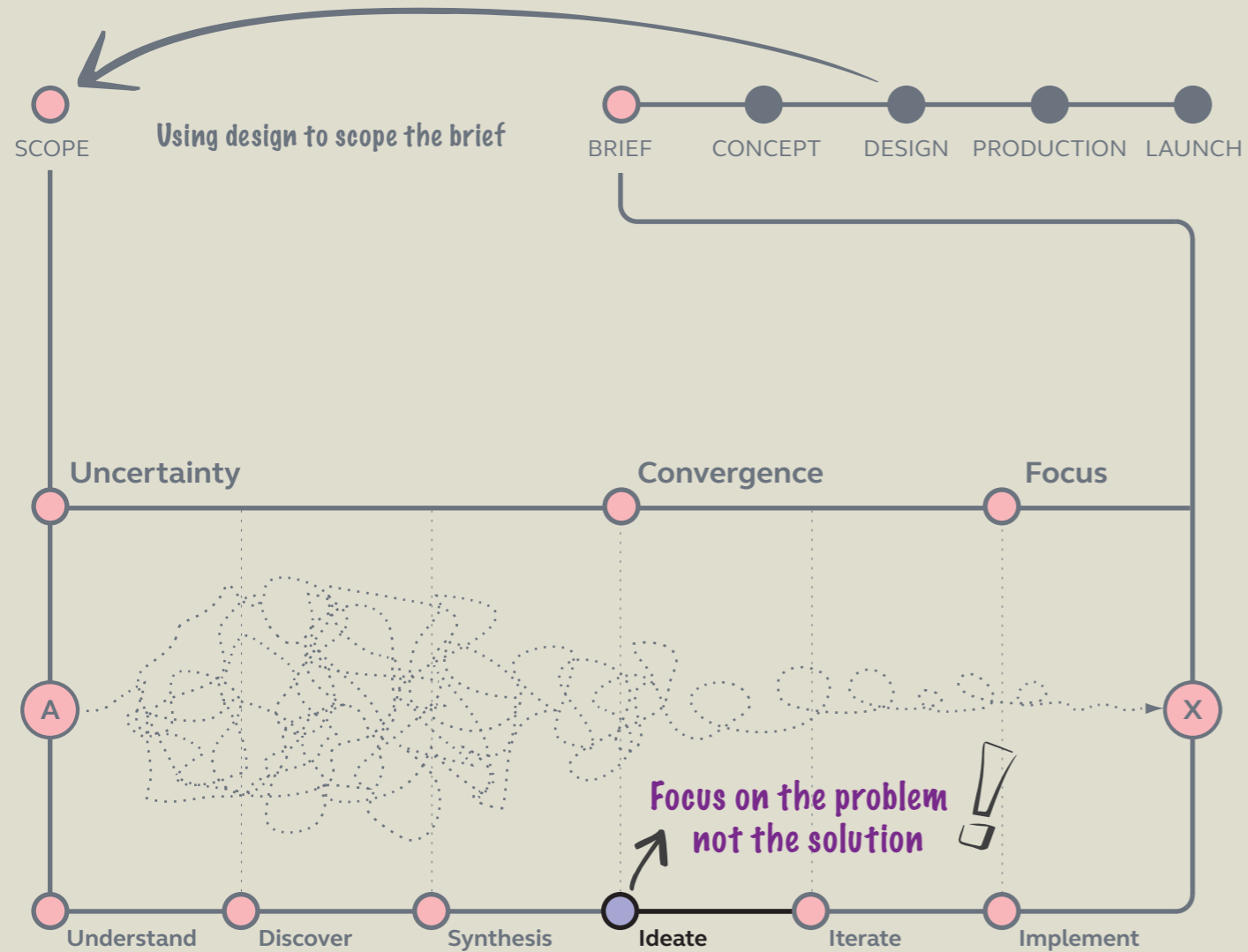
Ensuring that people have an open approach and a positive attitude towards change is as important as having them around the table.



EXAMPLE RESOURCES

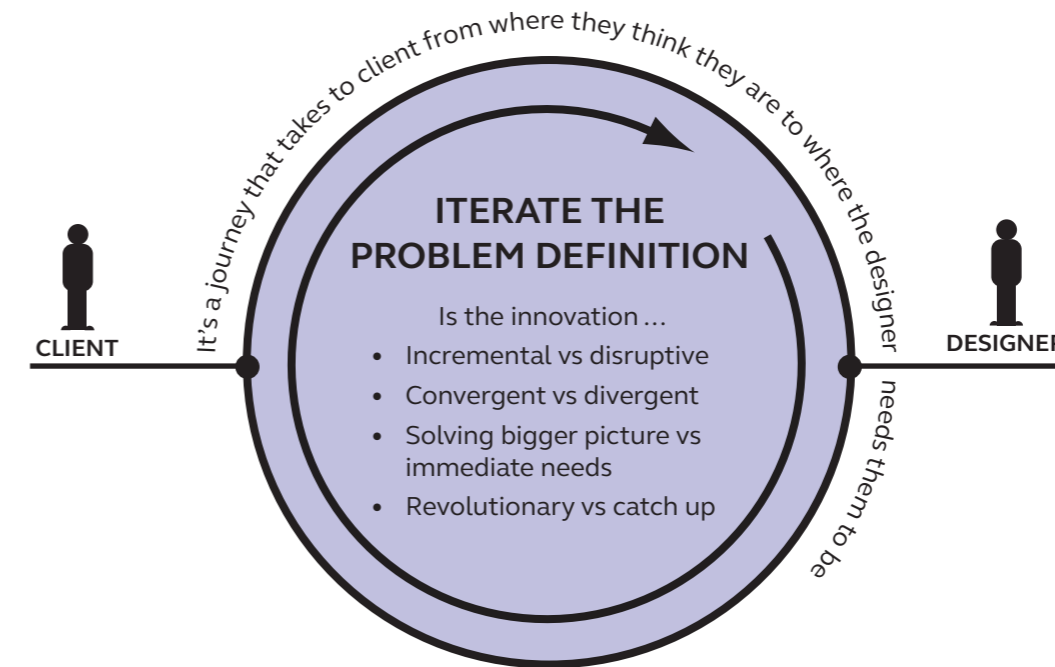
- Support team for example:
  - Design champion
  - User advocate
  - Technical advocate
  - Sector advocate
  - Financial advocate

What else?



## What is the problem the innovation will solve?

Focusing on innovation without an identified problem or market need will produce “solutions looking for a problem”, making it hard to realise a return on investment. Working with designers and utilising their problem solving skills on challenges can help to identify genuine opportunities with market pull.



Are the client and designer prepared to take the time that is needed to identify genuine user focused economic, social and environmental opportunities?

## QUESTION 4

### EXAMPLE RESOURCES

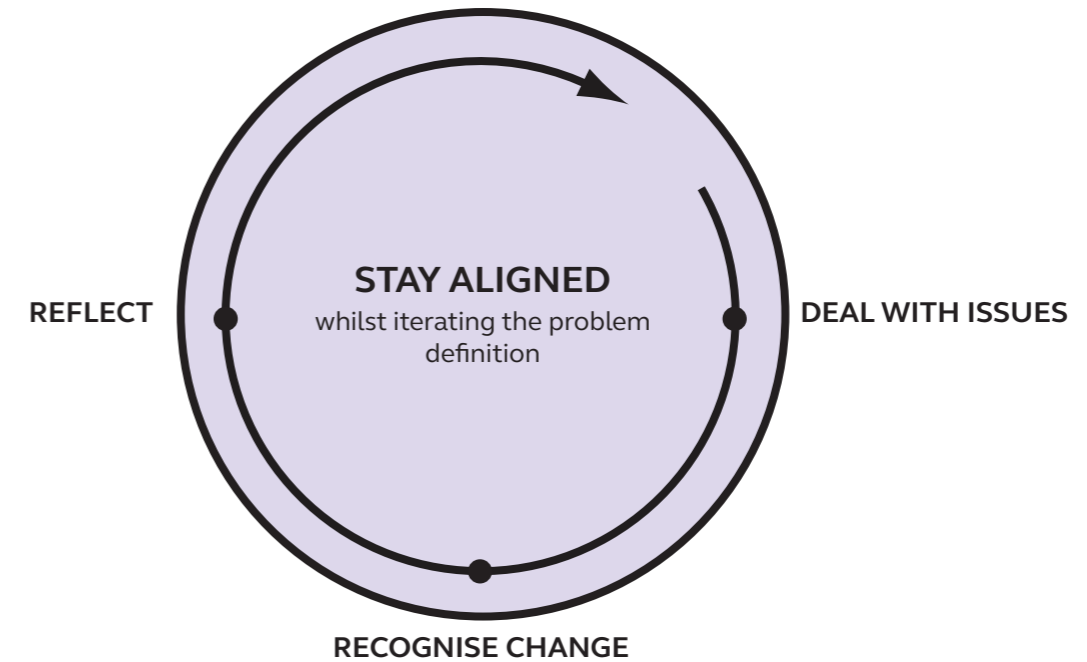
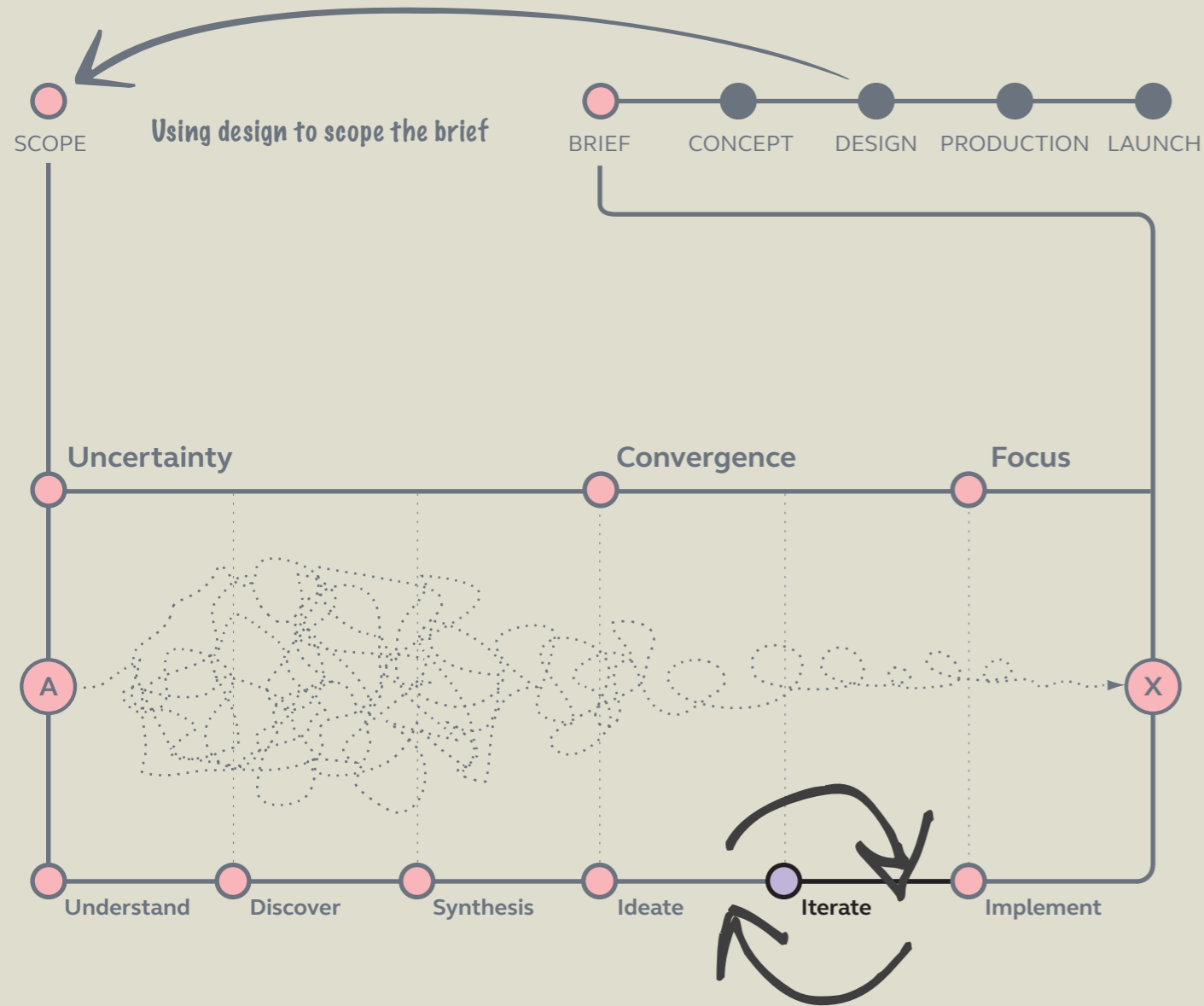
- Problem statement definition
- User focused research
- Agreed activity plan
- Creative workshops

What else?

### Are the client and designer moving forward together?

Key learnings and insights will feed into the process of creating the problem definition.

The direction of travel needs to be reviewed and aligned to keep everyone moving together with any changes to soft criteria being made explicit. Soft criteria might include motivations, priorities, needs, attitudes and expectations.



**Reflect:**

- Reflect on hard and soft criteria
- What have we learnt and what has changed as a result?
- Is the idea still viable?

**Recognise change:**

- Recognise change to the process & organisational needs
- Are there new requirements?
- Review implications of change

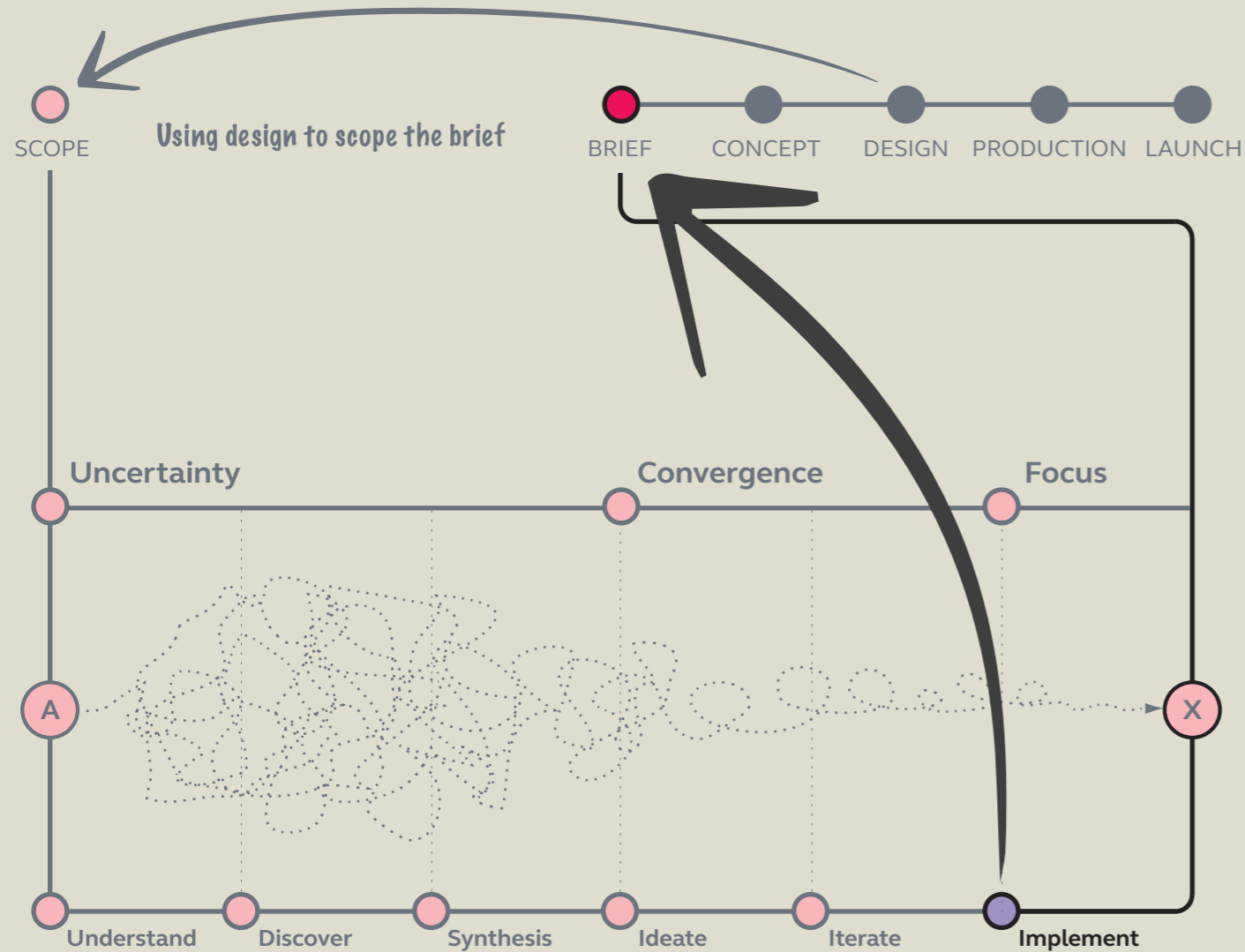
**Deal with issues:**

- Have processes in place to deal with anxiety, conflict and issues
- Deal with multiple points of view
- Turn conflict into trust

EXAMPLE RESOURCES

- Working visual map for diagnostics and to capture responses – for example, a project wall
- Client design facilitator to support alignment on direction of travel

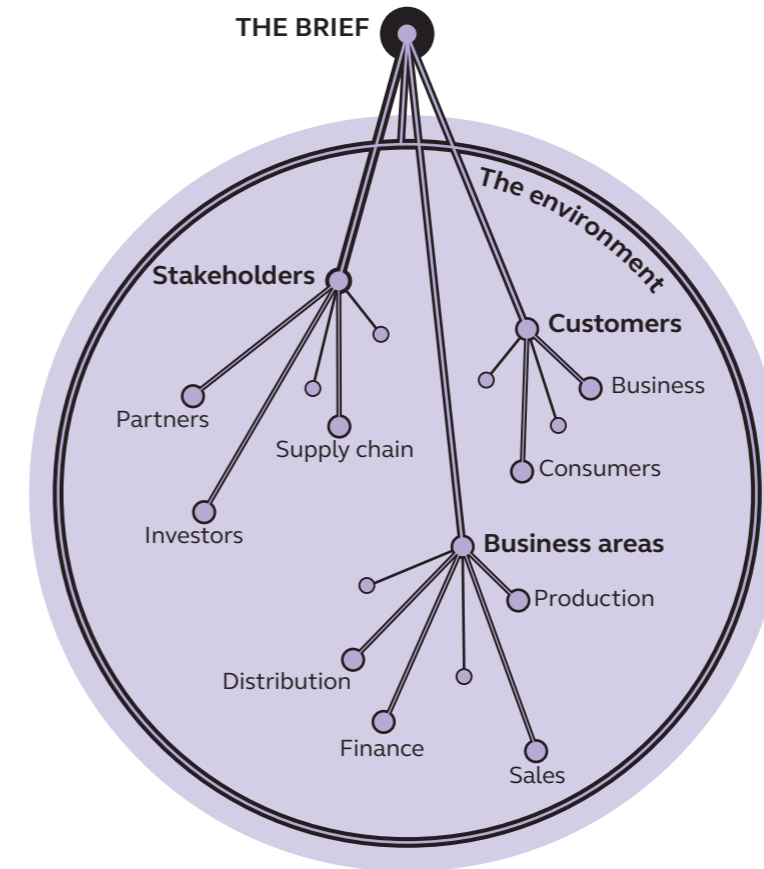
*What else?*



**Does the brief cover all necessary aspects of the business?**

Using design in innovation can highlight the need for a change that affects every part of a business – from manufacturing processes and business models to customer service strategies. The deliverable in this process needs to be a well-rounded problem definition that takes into account all parts of the organisation, its customers and the environment in which it works.

It is vital that this definition is shared with each part of the business affected by the innovation, in order to gain buy-in from the relevant individuals and decision makers within the client organisation, before continuing further development.



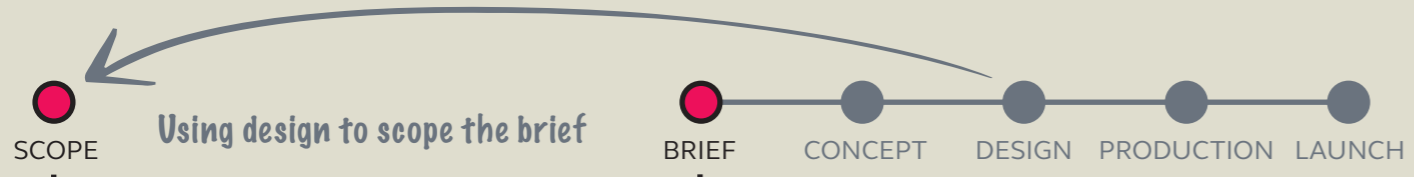
Design takes a holistic approach to enable innovation across a business

EXAMPLE RESOURCES

- Review workshop
- Report outputs which could include: opportunity maps, a strategy roadmap or framework and a service blueprint

*What else?*






# In Summary

Here are some examples of activities, people and resources that can help support the design in innovation process.

|                           | Uncertainty   |   |  | Convergence   |  | Focus   |
|---------------------------|---|---|--|---|--|---|
|                           | Empathise, build trust and maintain confidence  |   |  | Resolve conflict before moving forward  |  | Get buy in  |
|                           | understand  | discover  | synthesis  | ideate  | iterate  | implement   |
|                           | <p><b>Are the right values, expectations and skills in place?</b></p> <ul style="list-style-type: none"> <li>Can we work together to communicate, build trust and confidence?</li> </ul>                            | <p><b>Are the client and designer able to acknowledge differences?</b></p> <ul style="list-style-type: none"> <li>Cultural differences</li> <li>Constraints</li> <li>Weaknesses</li> </ul>                          | <p><b>Is there an established shared understanding?</b></p> <ul style="list-style-type: none"> <li>Process</li> <li>Language</li> <li>Ownership</li> </ul> | <p><b>What is the problem the innovation will solve?</b></p> <ul style="list-style-type: none"> <li>Focus on the problem not the solution</li> </ul>  | <p><b>Are the client and designer moving forward together?</b></p> <ul style="list-style-type: none"> <li>Reflect on what's happened</li> <li>Recognise change</li> <li>Work on the relationship</li> </ul>  | <p><b>Does the problem definition cover all necessary aspects?</b></p> <ul style="list-style-type: none"> <li>Within the business (financial, processing, manufacturing etc)</li> </ul>   |
|                           | Support tools and resources to build credibility, increase understanding & support conversation   |   |  | Support tools and resources to enable project iteration   |  |   |
| DESIGNER                  | <ul style="list-style-type: none"> <li>Case studies with projects, approaches &amp; outcomes</li> <li>Designer credentials</li> <li>Portfolio tool "What do you think you need?"</li> <li>Example briefs</li> </ul> | <ul style="list-style-type: none"> <li>Time for open conversations on expectations and values</li> <li>Document outlining agreed approach</li> </ul>  |  | <ul style="list-style-type: none"> <li>Problem statement definition iterated throughout process</li> <li>User focused research</li> <li>Agreed activity plan</li> <li>Creative workshops</li> </ul> | <ul style="list-style-type: none"> <li>Working visual map for diagnostics and to capture responses – for example, a project wall</li> </ul>  | <ul style="list-style-type: none"> <li>Review workshop<br/>What was the project? How was it for you? What worked and what didn't?</li> <li>Report outputs which could include: opportunity maps, a strategy roadmap or framework and a service blueprint</li> </ul> |
| CLIENT                    | <ul style="list-style-type: none"> <li>Background briefing document</li> <li>Project initiation document</li> </ul>   |   |  | <ul style="list-style-type: none"> <li>Problem statement definition iterated throughout process</li> <li>User focused research</li> <li>Agreed activity plan</li> <li>Creative workshops</li> </ul> |  |   |
| CLIENT DESIGN FACILITATOR | <ul style="list-style-type: none"> <li>To support communication between client &amp; designer</li> <li>Listen, prepare, reflect &amp; iterate throughout process</li> </ul>   | <ul style="list-style-type: none"> <li>To bridge perspectives between client &amp; designer</li> <li>Manage expectations</li> <li>Help create an environment to allow trust &amp; confidence to flourish</li> </ul> | <ul style="list-style-type: none"> <li>Support client ownership</li> </ul>   |   | <ul style="list-style-type: none"> <li>To support alignment on direction of travel</li> <li>Balance conflict and support resistance to change</li> <li>Capture responses &amp; changes in process</li> </ul> |   |
| SUPPORT TEAM              | <p><b>For example:</b> User advocate, technical advocate, financial advocate, design champion, sector advocate</p>  |   |  |   |  |   |



Using design in early stage innovation generates a range of good ideas which can be more confidently developed towards commercialisation.

This report explores the different ways in which design can inform these early stages by creating the right conditions to help it flourish. It is informed by a number of workshops and events convened by the Knowledge Transfer Network.

The Knowledge Transfer Network is the UK's Innovation network. We link new ideas and opportunities with expertise, markets and finance through our network of businesses, universities, funders and investors.

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