DESIGN IN INNOVATION

Using design early for greater success

DESIGN

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Using design early for greater success

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, effecting 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 multi disciplinary sector, from strategic design to brand design. This provides a huge opportunity for UKplc to exploit the use of design in early stage innovation to deliver products and services with increased "market pull" and improved social, economic and environmental impact. According to a Department for Business, Innovation and Skills report, every £1 invested in design provides an average return on investment of £25.
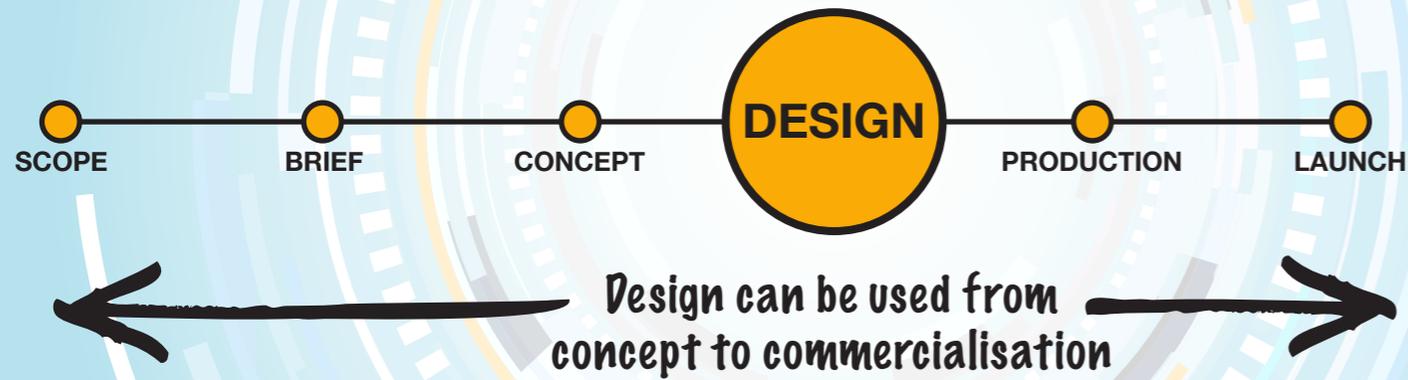
The Design Special Interest Group (SIG) has been exploring how design can be used in innovation and what is needed to create the best environment for design to deliver high value. This document shares these findings and aims to support ongoing dialogue between designers, technologists and innovators to successfully realise the opportunity.

SCOPE   BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH
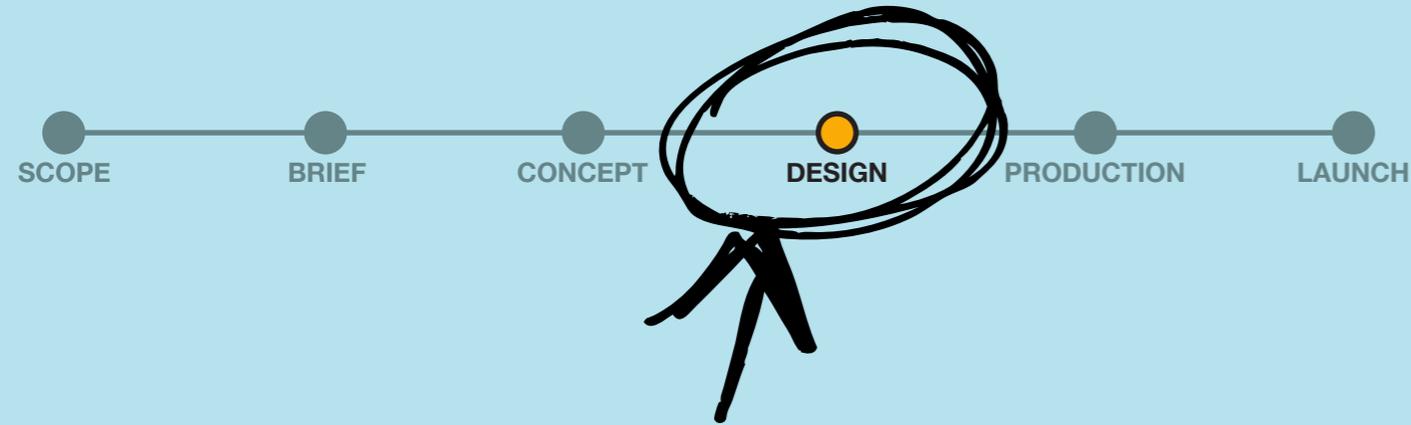
Design is often considered late
in a typical development process

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.

SCOPE   BRIEF   CONCEPT   **DESIGN**   PRODUCTION   LAUNCH

Design can be used from concept to commercialisation

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.

SCOPE BRIEF CONCEPT DESIGN PRODUCTION LAUNCH
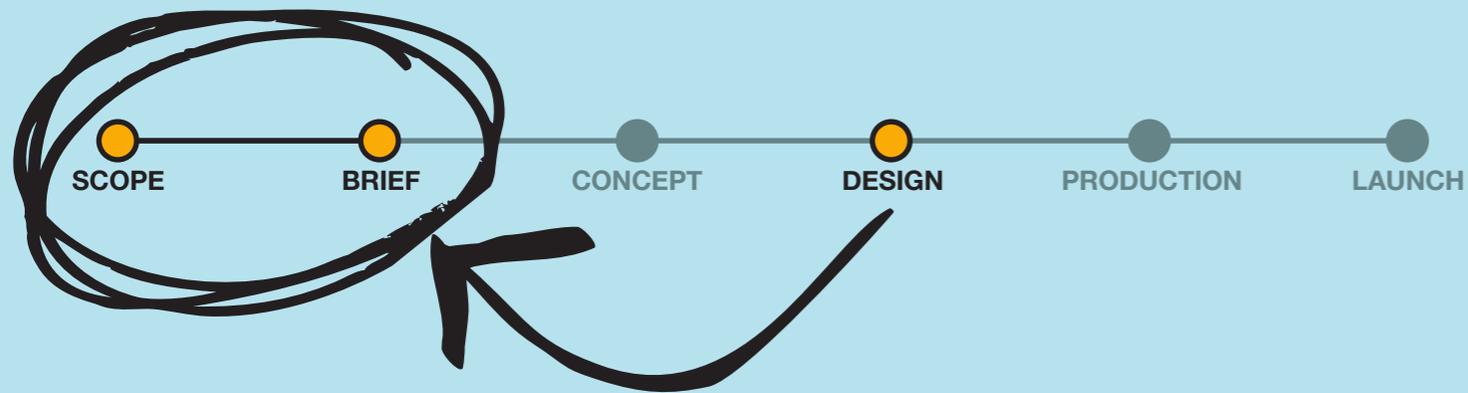
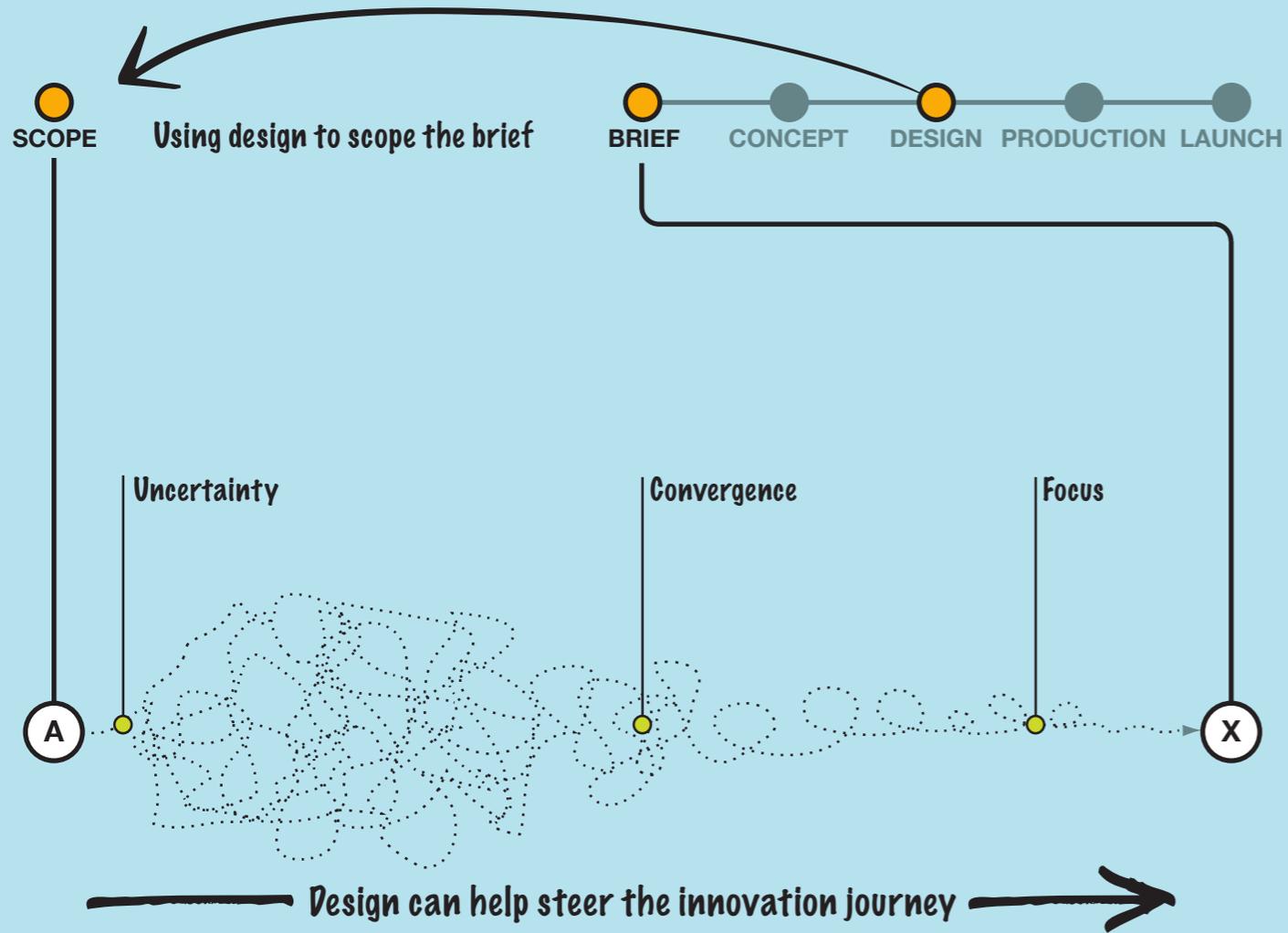Design is highly effective
when used to scope the brief

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".

SCOPE ● BRIEF ● CONCEPT ● DESIGN ● PRODUCTION ● LAUNCH

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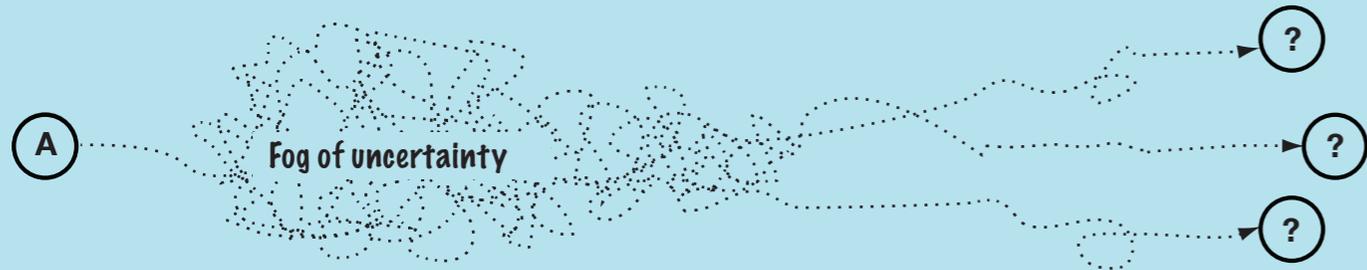
There can be an expectation that innovation is a clear path from A to B.

A ···· Fog of uncertainty ····▸ ?
····▸ ?
····▸ ?

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

SCOPE

Using design to scope the brief

BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH

Uncertainty   Convergence   Focus

A   X

Design can help steer the innovation journey

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.
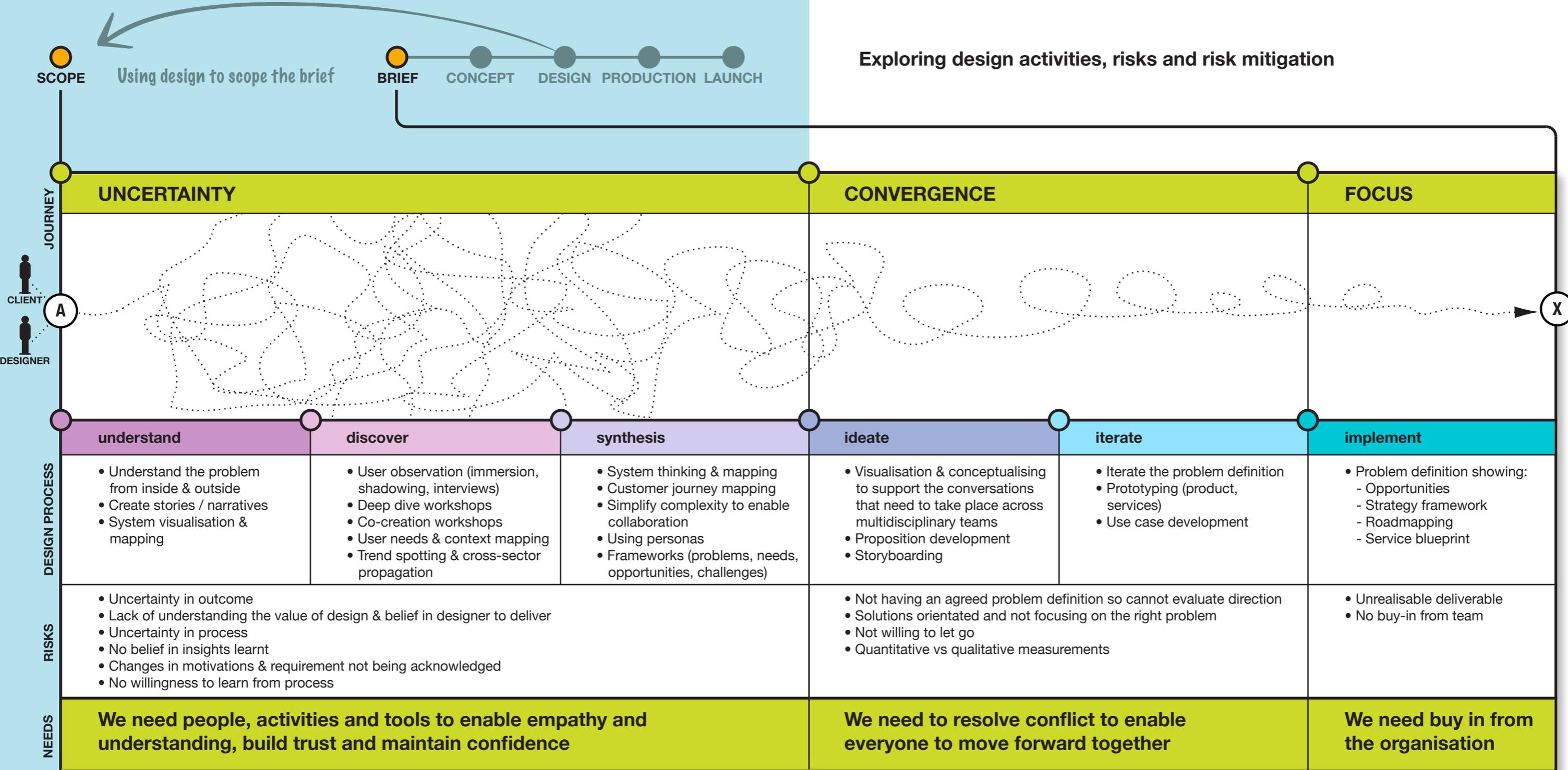
SCOPE   *Using design to scope the brief*   BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH

By utilising a designer's core skills in user focus, problem solving skills and systemic thinking, design can help navigate the innovation process

Uncertainty   Convergence   Focus

A   X

Understand   Discover   Synthesis   Ideate   Iterate   Implement
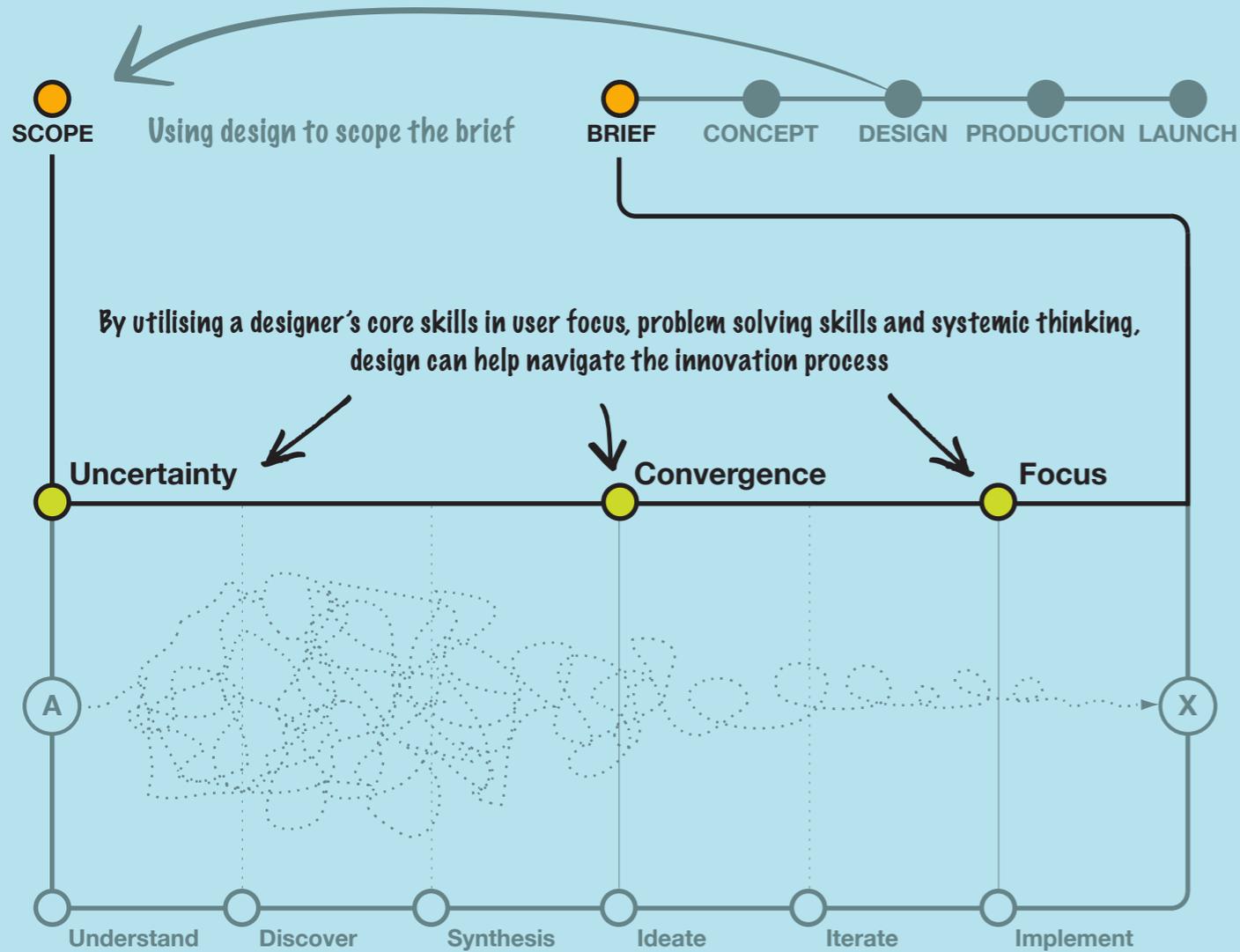
Creating the best environment for design in innovation to deliver high value

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.

SCOPE — *Using design to scope the brief*

BRIEF — CONCEPT — DESIGN — PRODUCTION — LAUNCH

Exploring design activities, risks and risk mitigation

CLIENT

DESIGNER

A → X

	JOURNEY	
UNCERTAINTY	**CONVERGENCE**	**FOCUS**

understand	discover	synthesis	ideate	iterate	implement

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

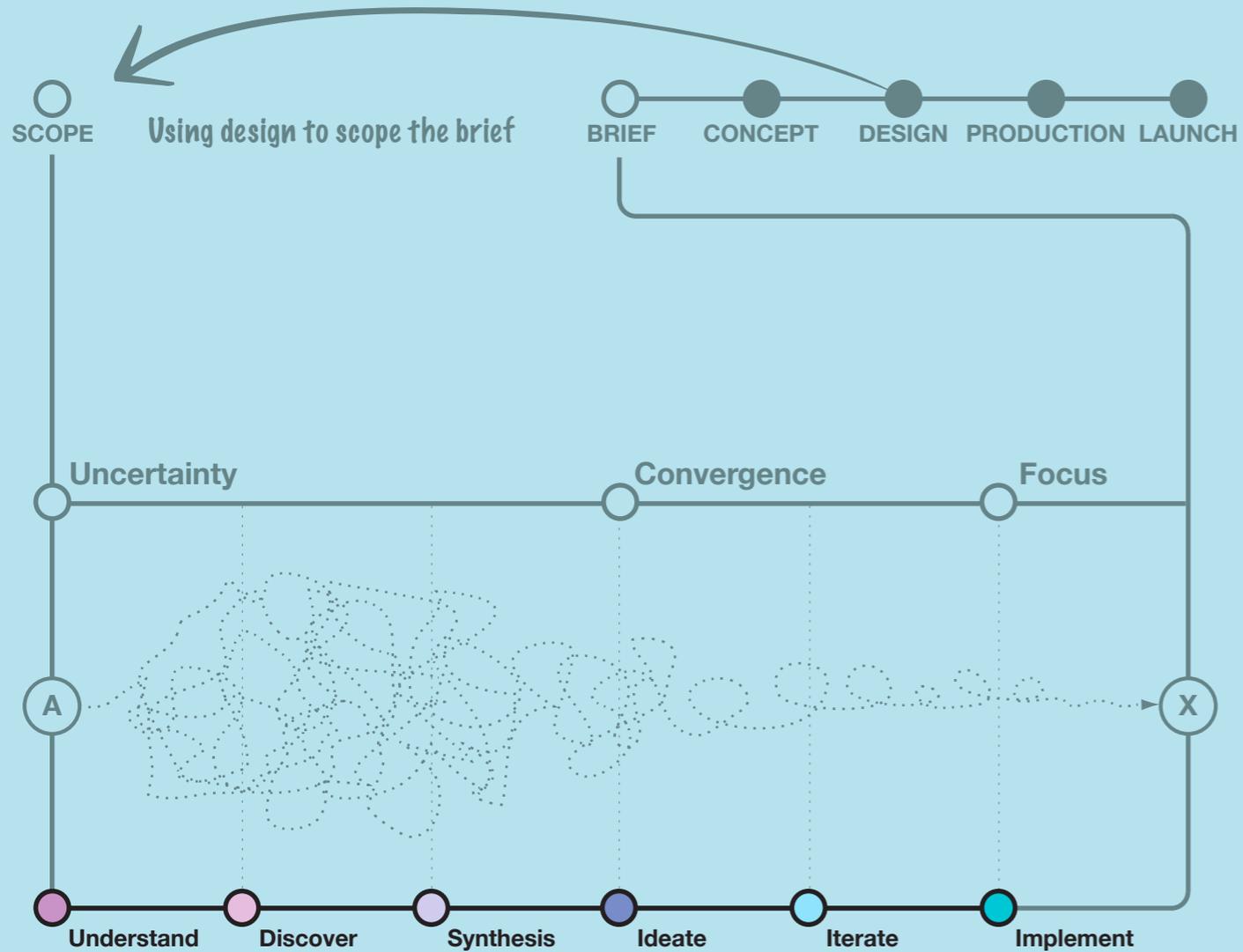| UNCERTAINTY	CONVERGENCE	FOCUS
• Uncertainty in outcome • Lack of understanding the value of design & belief in designer to deliver • Uncertainty in process • No belief in insights learnt • Changes in motivations & requirement not being acknowledged • No willingness to learn from process	• Not having 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

UNCERTAINTY	CONVERGENCE	FOCUS
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**

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SCOPE   Using design to scope the brief   BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH

Uncertainty   Convergence   Focus

A   X

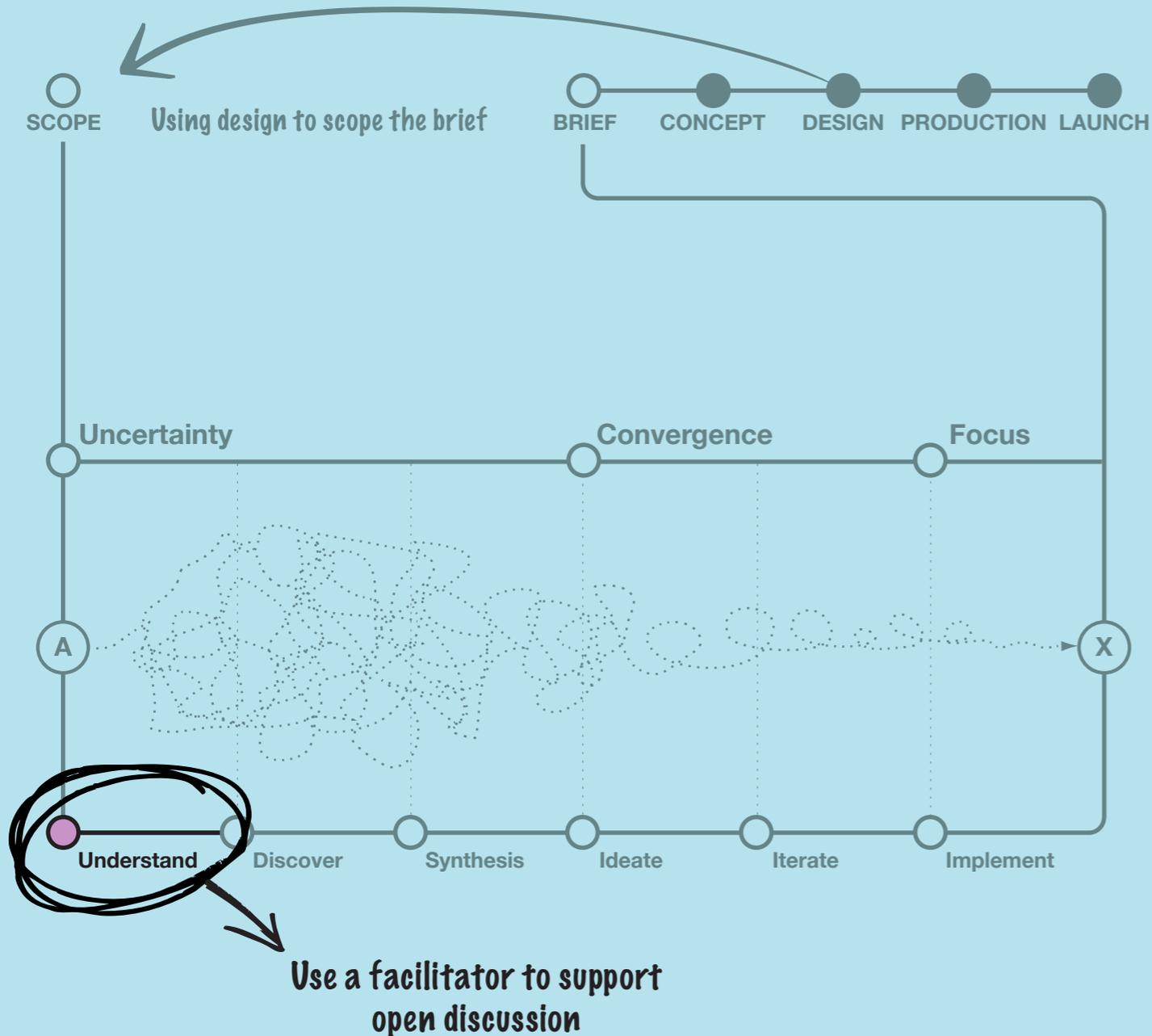Understand   Discover   Synthesis   Ideate   Iterate   Implement

Design in innovation is a journey

with the client and designer working together
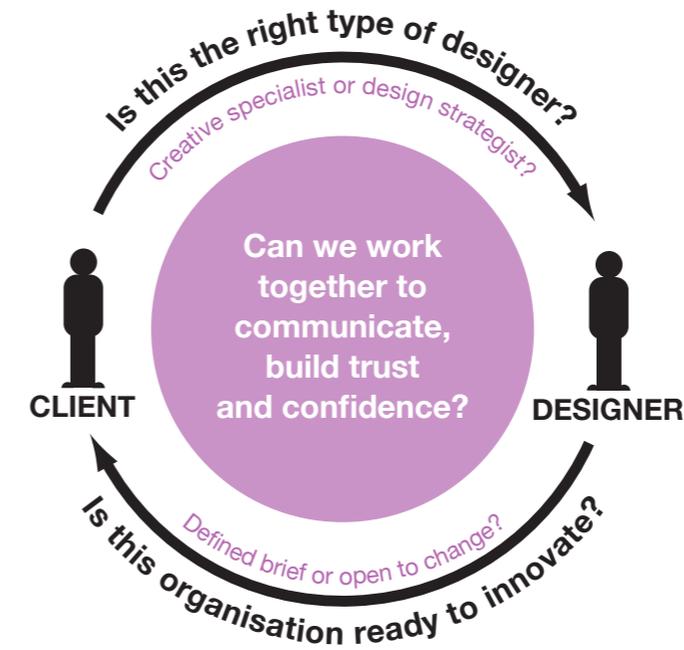to create the right conditions to allow the journey to take place

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.

Left diagram

SCOPE — Using design to scope the brief — **BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH**

Uncertainty   Convergence   Focus

A   X

Understand   Discover   Synthesis   Ideate   Iterate   Implement

Use a facilitator to support open discussion

Right page

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.**

Is this the right type of designer?
Creative specialist or design strategist?

CLIENT   Can we work together to communicate, build trust and confidence?   **DESIGNER**

Defined brief or open to change?
Is this organisation ready to innovate?

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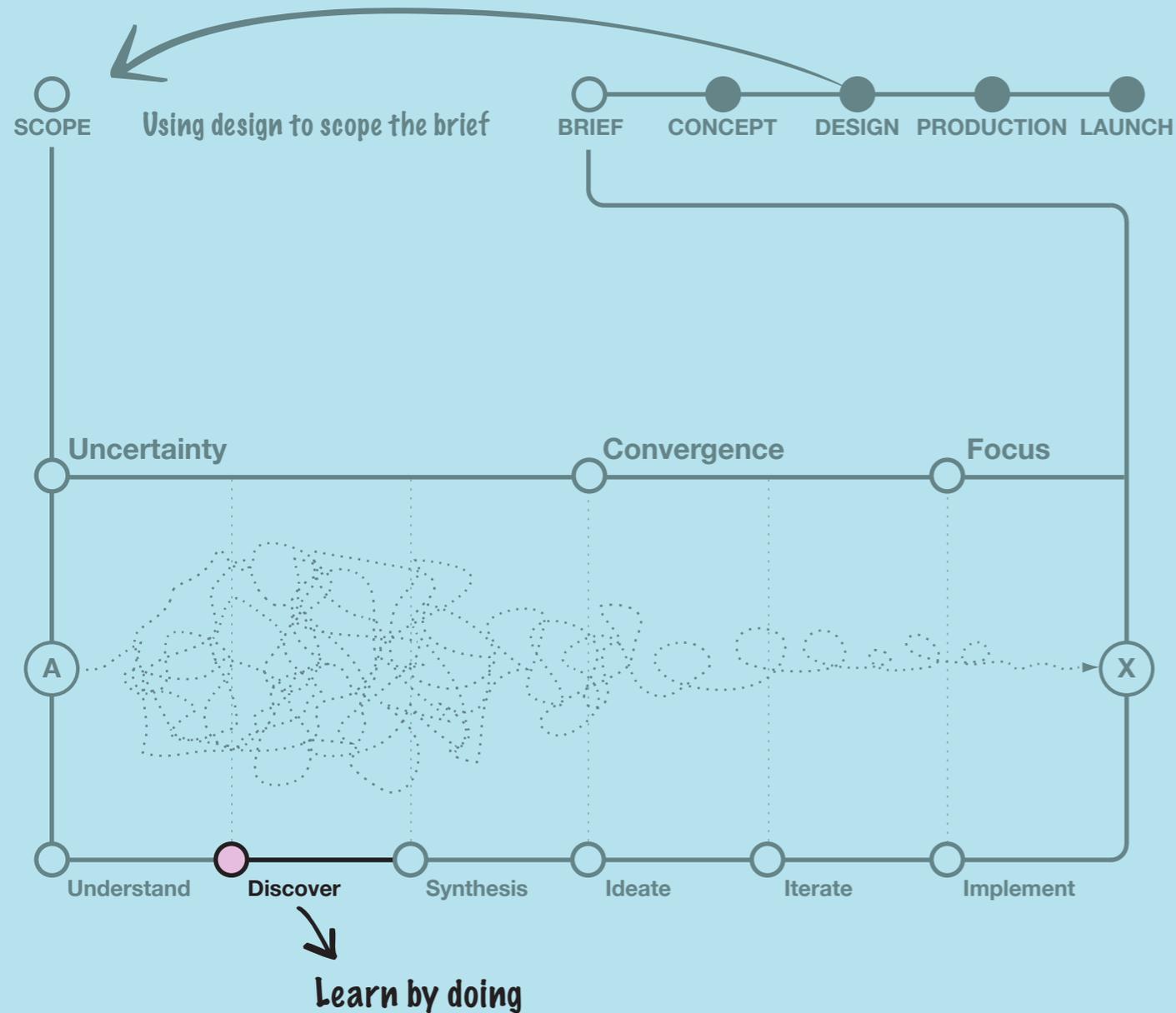
Does the designer have:
- Understanding of the environment the client is working in e.g. time, money, people, values and expectations?
- Suitable credentials and relevant experience?
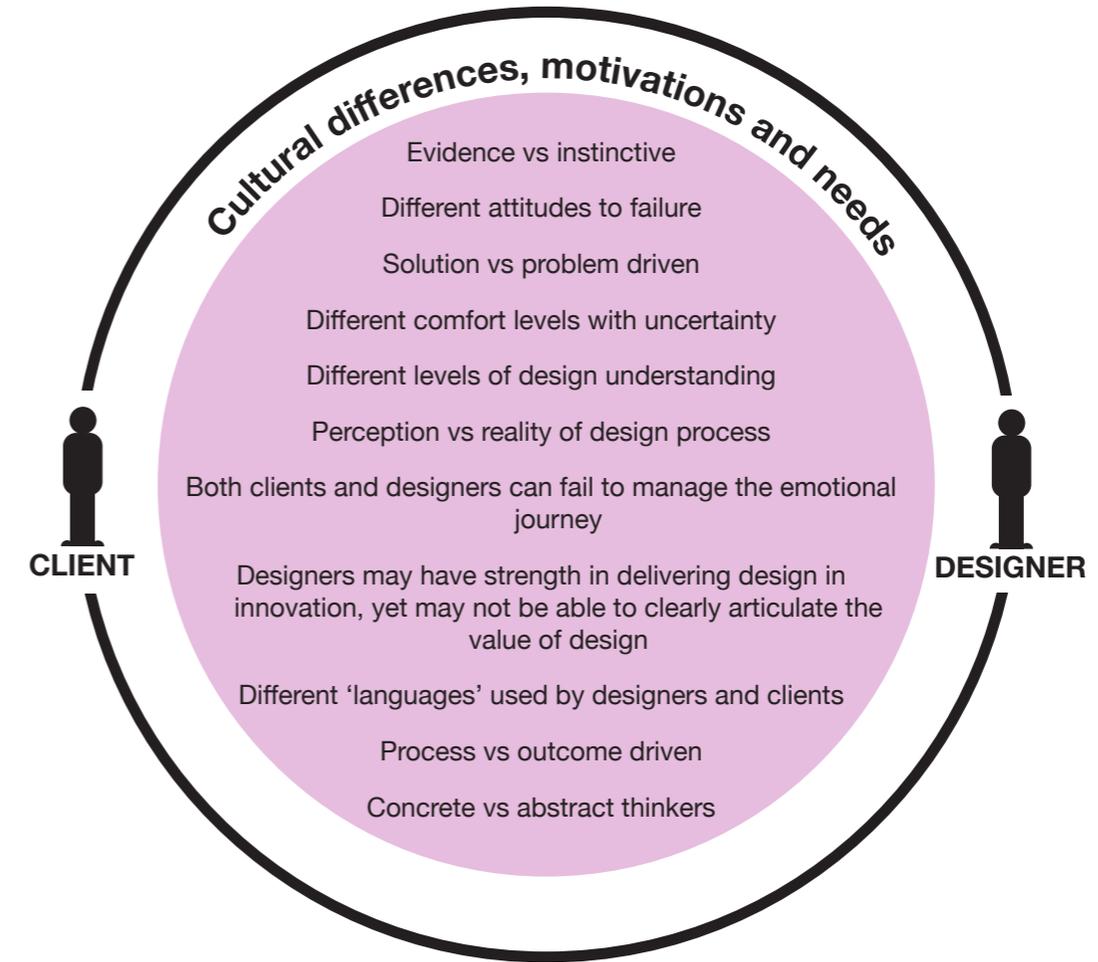- Ability to communicate in a way the client can relate to?

What else?

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Left diagram

SCOPE   Using design to scope the brief   BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH

Uncertainty   Convergence   Focus

A   X

Understand   Discover   Synthesis   Ideate   Iterate   Implement

Learn by doing

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.

Cultural differences, motivations and needs

CLIENT   DESIGNER

Evidence vs instinctive

Different attitudes to failure

Solution vs problem driven

Different comfort levels with uncertainty

Different levels of design understanding

Perception vs reality of design process

Both clients and designers can fail to manage the emotional journey

Designers may have strength in delivering design in innovation, yet may not be able to clearly articulate the value of design

Different 'languages' used by designers and clients

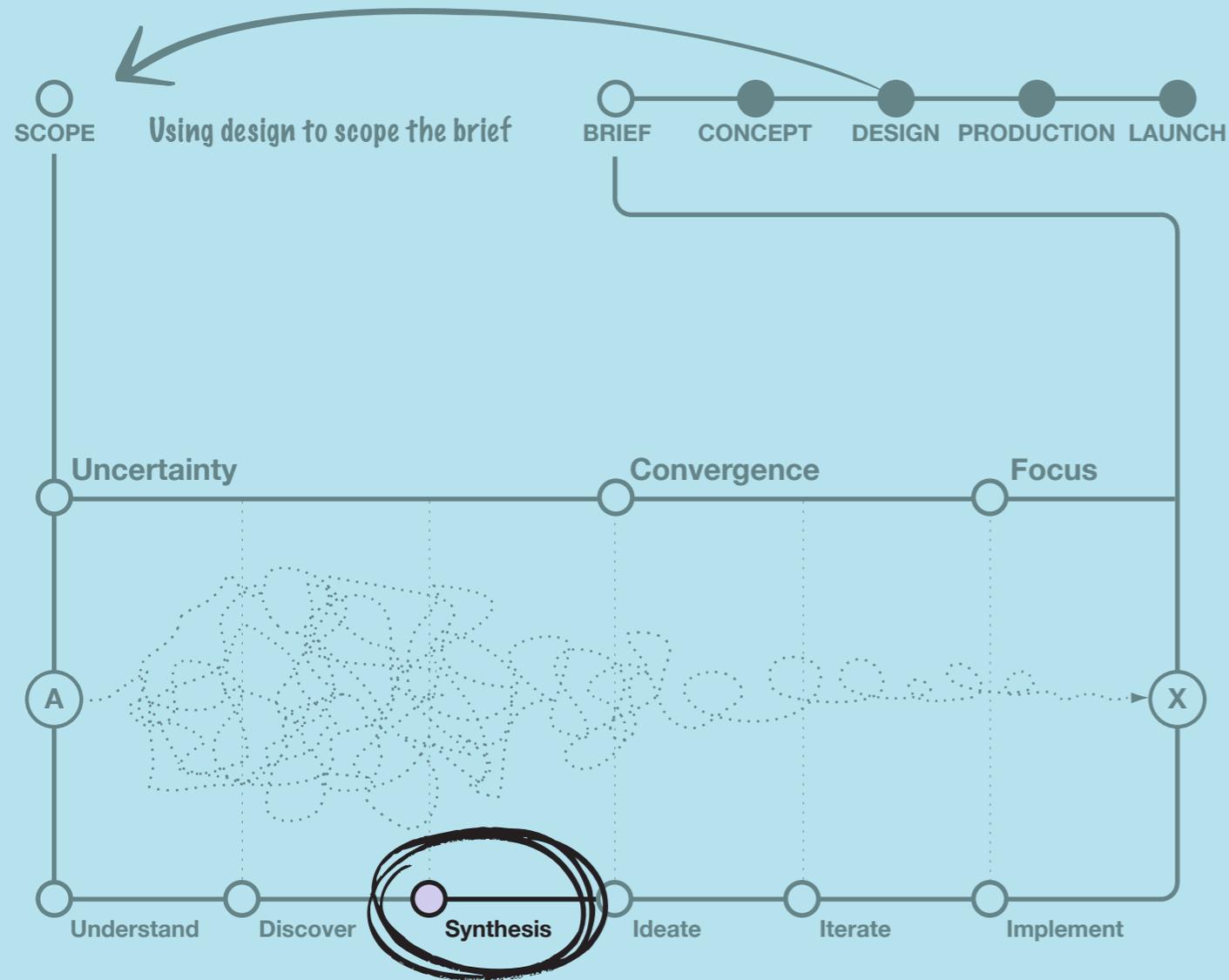Process vs outcome driven

Concrete vs abstract thinkers

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.**

What else ?

Diagram (left panel)

SCOPE — Using design to scope the brief — BRIEF — CONCEPT — DESIGN — PRODUCTION — LAUNCH

Uncertainty — Convergence — Focus

A ········· design ········· X
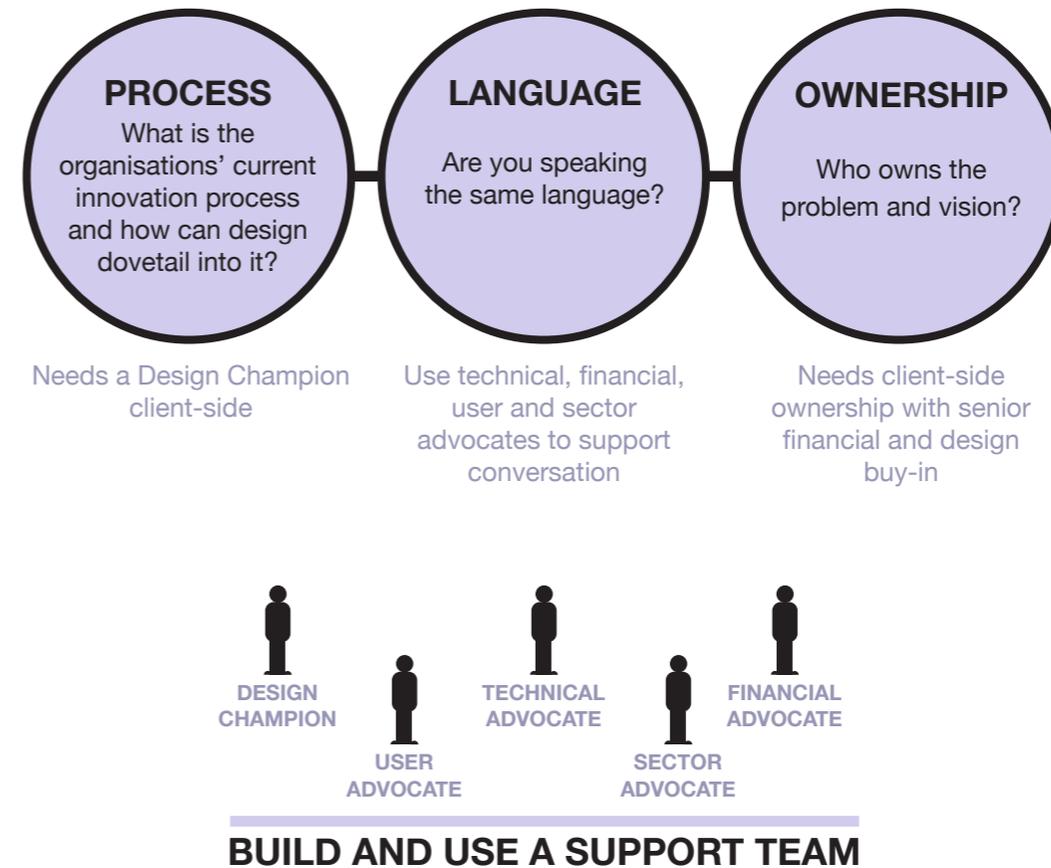
Understand — Discover — Synthesis — Ideate — Iterate — Implement

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.
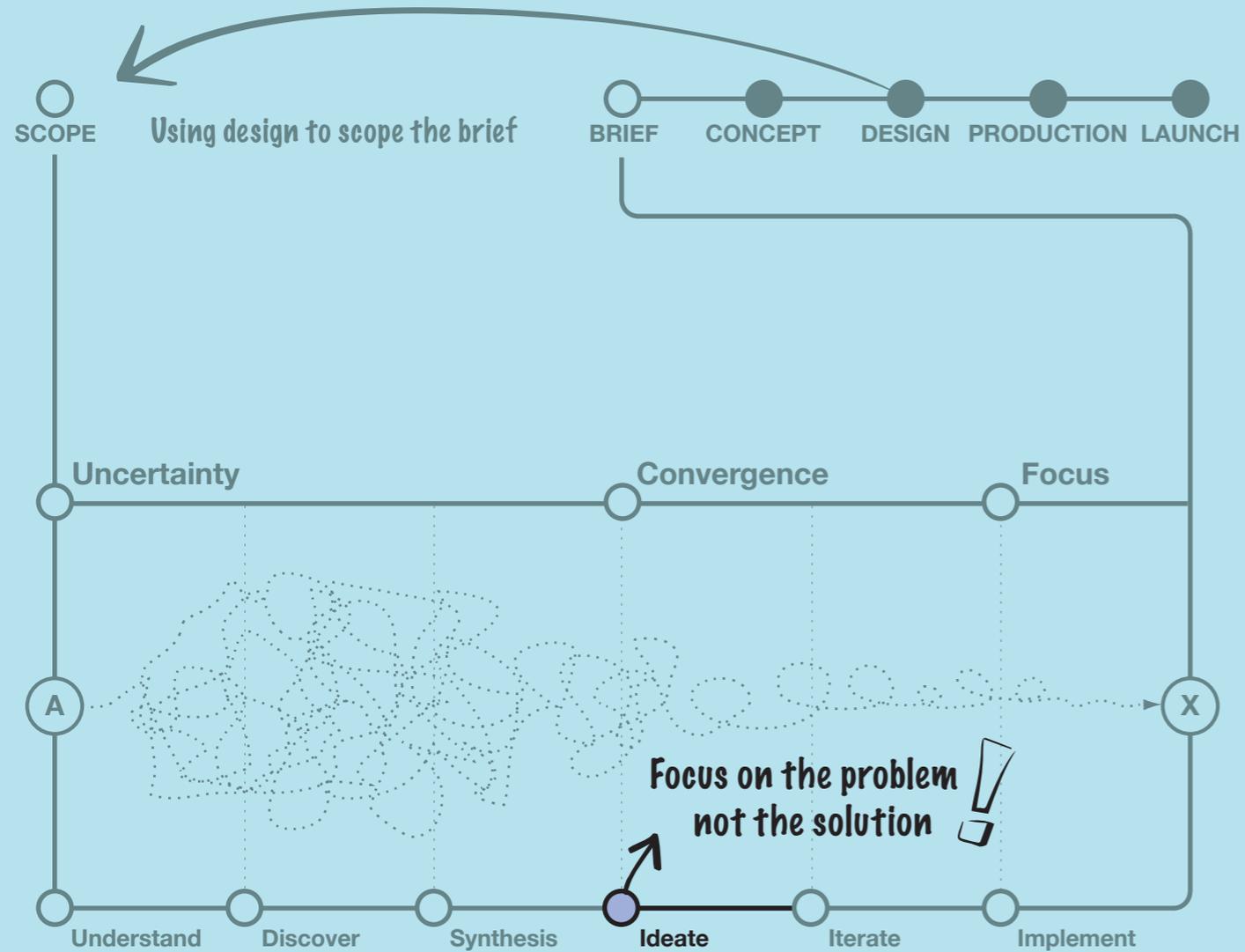
Ensuring that people have an open approach and a positive attitude towards change is as important as having them around the table.
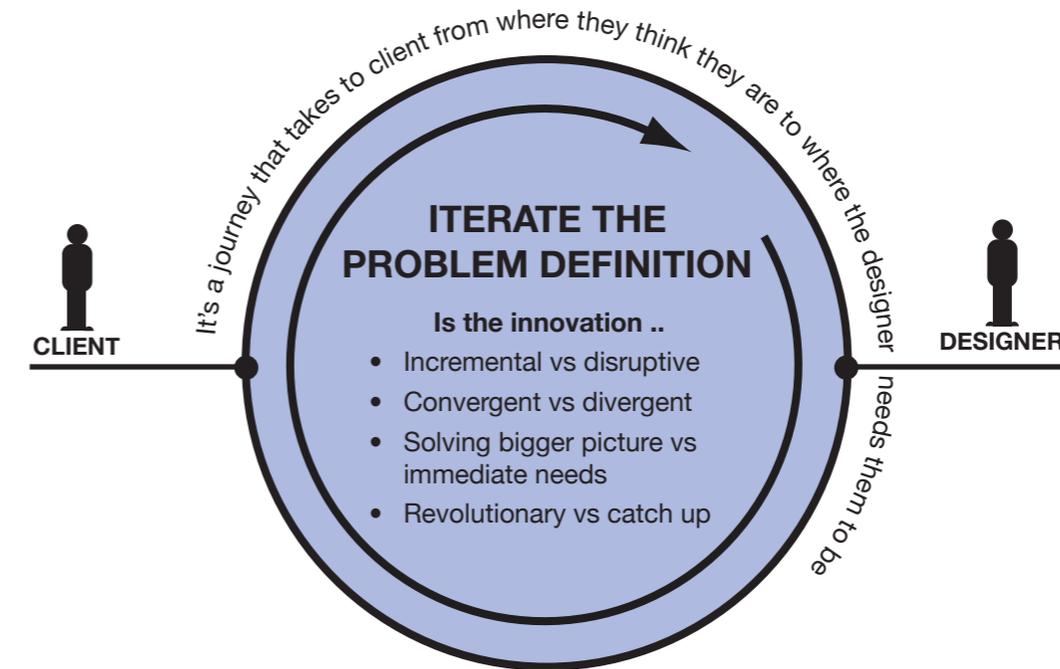
PROCESS
What is the organisations' current innovation process and how can design dovetail into it?

LANGUAGE
Are you speaking the same language?

OWNERSHIP
Who owns the problem and vision?

Needs a Design Champion client-side

Use technical, financial, user and sector advocates to support conversation

Needs client-side ownership with senior financial and design buy-in

DESIGN CHAMPION
USER ADVOCATE
TECHNICAL ADVOCATE
SECTOR ADVOCATE
FINANCIAL ADVOCATE

BUILD AND USE A SUPPORT TEAM

What else ?

SCOPE — Using design to scope the brief — BRIEF — CONCEPT — DESIGN — PRODUCTION — LAUNCH

Uncertainty   Convergence   Focus

A

X

Focus on the problem not the solution !

Understand   Discover   Synthesis   Ideate   Iterate   Implement

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.

It's a journey that takes to client from where they think they are to where the designer needs them to be

CLIENT

ITERATE THE PROBLEM DEFINITION

Is the innovation ..
- Incremental vs disruptive
- Convergent vs divergent
- Solving bigger picture vs immediate needs
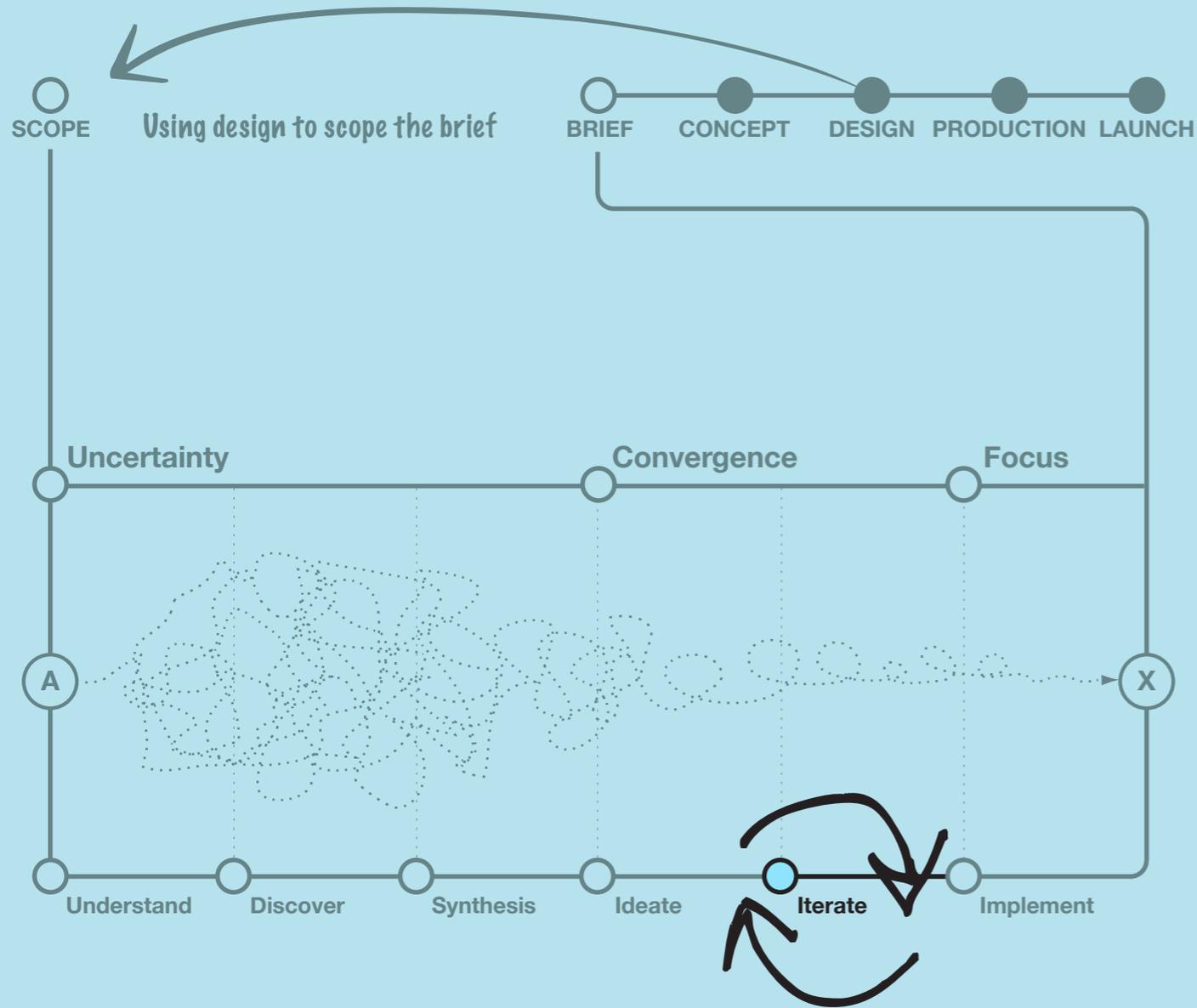- Revolutionary vs catch up

DESIGNER

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

EXAMPLE RESOURCES

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

What else ?

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Diagram (left panel)

SCOPE *Using design to scope the brief* BRIEF CONCEPT DESIGN PRODUCTION LAUNCH

Uncertainty Convergence Focus

A

X

Understand Discover Synthesis Ideate Iterate Implement

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

STAY ALIGNED
whilst iterating the problem definition

DEAL WITH ISSUES
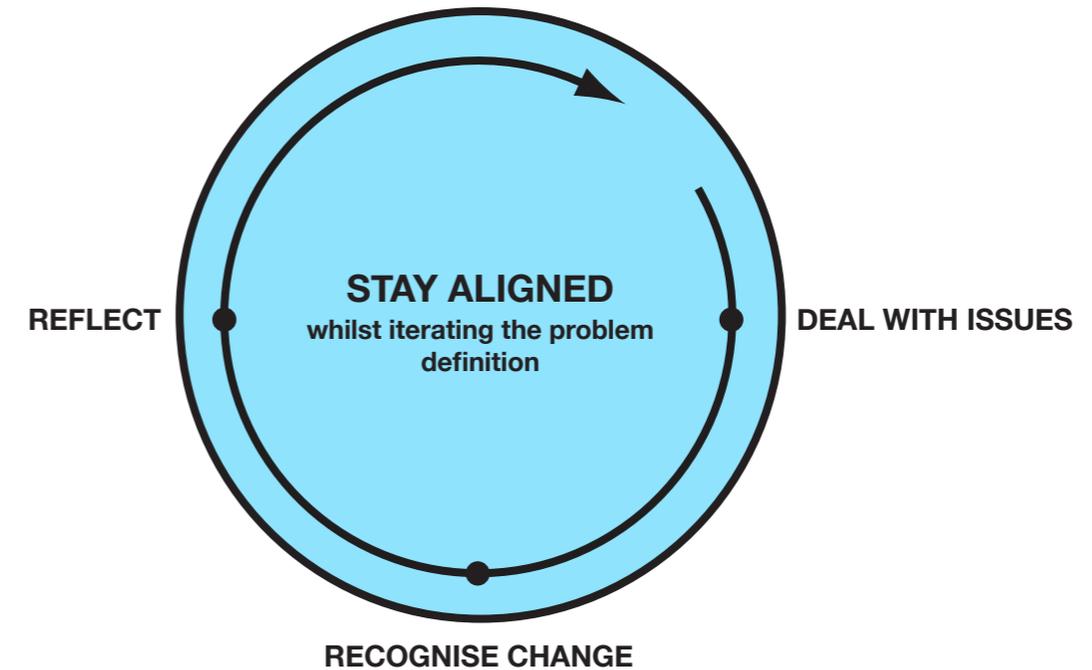
RECOGNISE CHANGE

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?

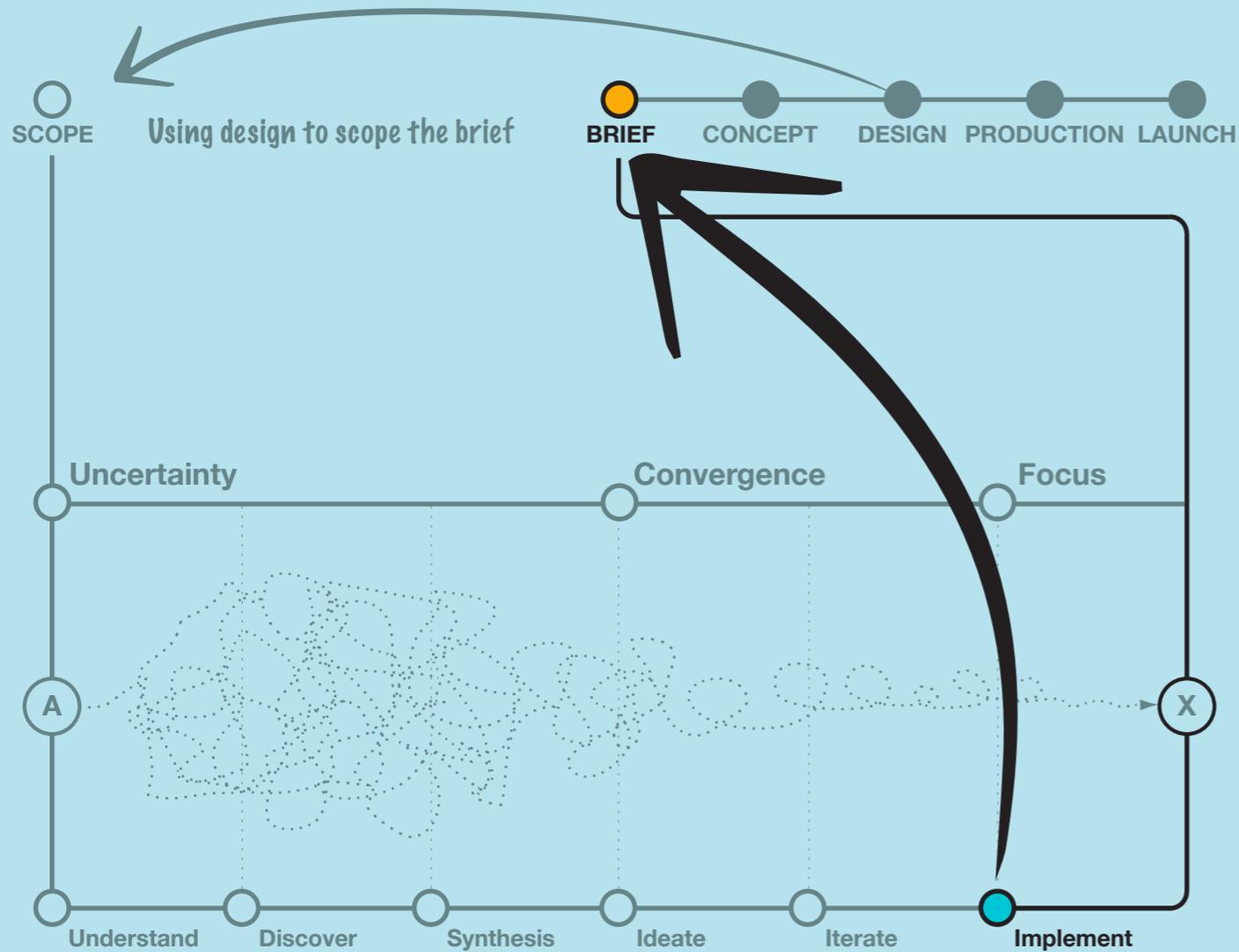• Review implications of change

Deal with issues:

• Have processes in place to deal with anxiety, conflict and issues

• Deal with multiple points of view

• Turn conflict into trust

What else ?

Using design to scope the brief

SCOPE   BRIEF   CONCEPT   DESIGN   PRODUCTION   LAUNCH

Uncertainty   Convergence   Focus

A   X
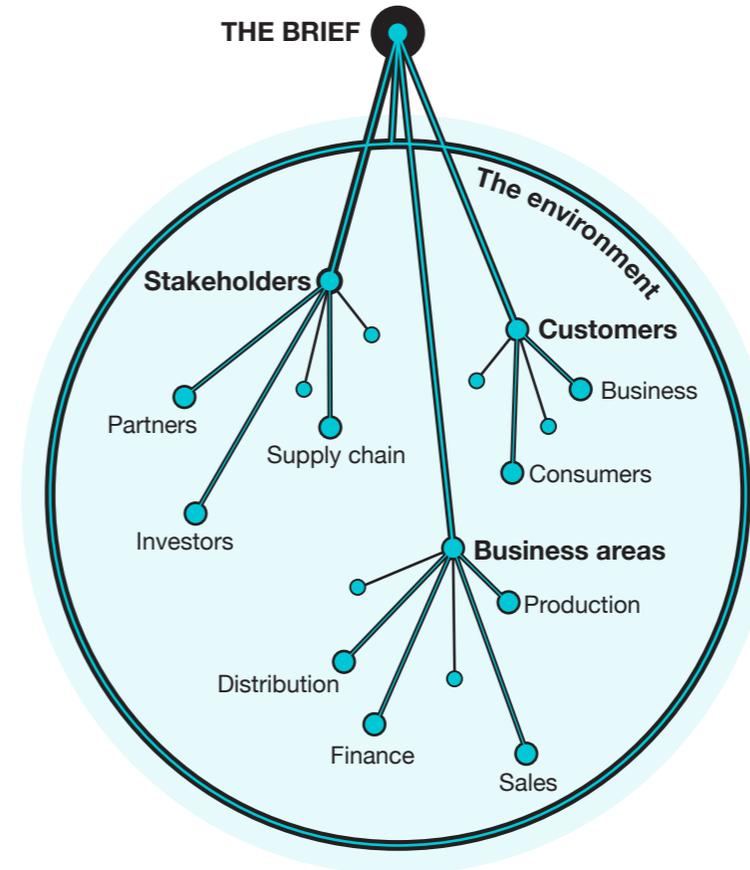
Understand   Discover   Synthesis   Ideate   Iterate   Implement

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.

EXAMPLE RESOURCES

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

THE BRIEF

The environment

Stakeholders

Partners

Investors

Supply chain

Customers

Business

Consumers

Business areas

Production

Distribution

Finance

Sales

Design takes a holistic approach to enable innovation across a business

What else?

SCOPE

Using design to scope the brief

BRIEF — CONCEPT — DESIGN — PRODUCTION — LAUNCH

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
Are the right values, expectations and skills in place? • Can we work together to communicate, build trust and confidence?	**Are the client and designer able to acknowledge differences?** • Cultural differences • Constraints • Weaknesses	**Is there an established shared understanding?** • Process • Language • Ownership	**What is the problem the innovation will solve?** • Focus on the problem not the solution	**Are the client and designer moving forward together?** • Reflect on what's happened • Recognise change • Work on the relationship	**Does the problem definition cover all necessary aspects?** • Within the business (financial, processing, manufacturing etc)
Support tools and resources to build credibility, increase understanding & support conversation			**Support tools and resources to enable project iteration**		

DESIGNER

• **Case studies** with projects, approaches & outcomes • **Designer credentials** • **Portfolio tool** "What do you think you need?" • **Example briefs**	• **Time for open conversations** on expectations and values • Document outlining **agreed approach**		• **Problem statement definition** iterated throughout process • **User focused research** • **Agreed activity plan** • **Creative workshops**	• **Working visual map** for diagnostics and to capture responses – for example, a project wall	• **Review workshop** What was the project? How was it for you? What worked and what didn't? • **Report outputs** which could include: opportunity maps, a strategy roadmap or framework and a service blueprint

CLIENT

• **Background briefing** document • **Project initiation** document					

CLIENT DESIGN FACILITATOR

• To support communication between client & designer • Listen, prepare, reflect & iterate throughout process	• To bridge perspectives between client & designer • Manage expectations • Help create an environment to allow trust & confidence to flourish	• Support client ownership		• To support alignment on direction of travel • Balance conflict and support resistance to change • Capture responses & changes in process	

SUPPORT TEAM

For example: User advocate, technical advocate, financial advocate, design champion, sector advocate

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This report is informed by a number of workshops and events convened by the Design SIG to throw a spotlight on the different ways in which design can inform and enrich the innovation process.

The Design SIG was established by Innovate UK to foster a better understanding of the role of design in innovation.

It brings together the UK design and technology communities to help catalyse new collaborations, projects and partnerships that create sustainable economic value.

The Design SIG is part of the Knowledge Transfer Network (KTN), the UK's innovation network. KTN brings together businesses, entrepreneurs, academics and funders to develop new products and services.