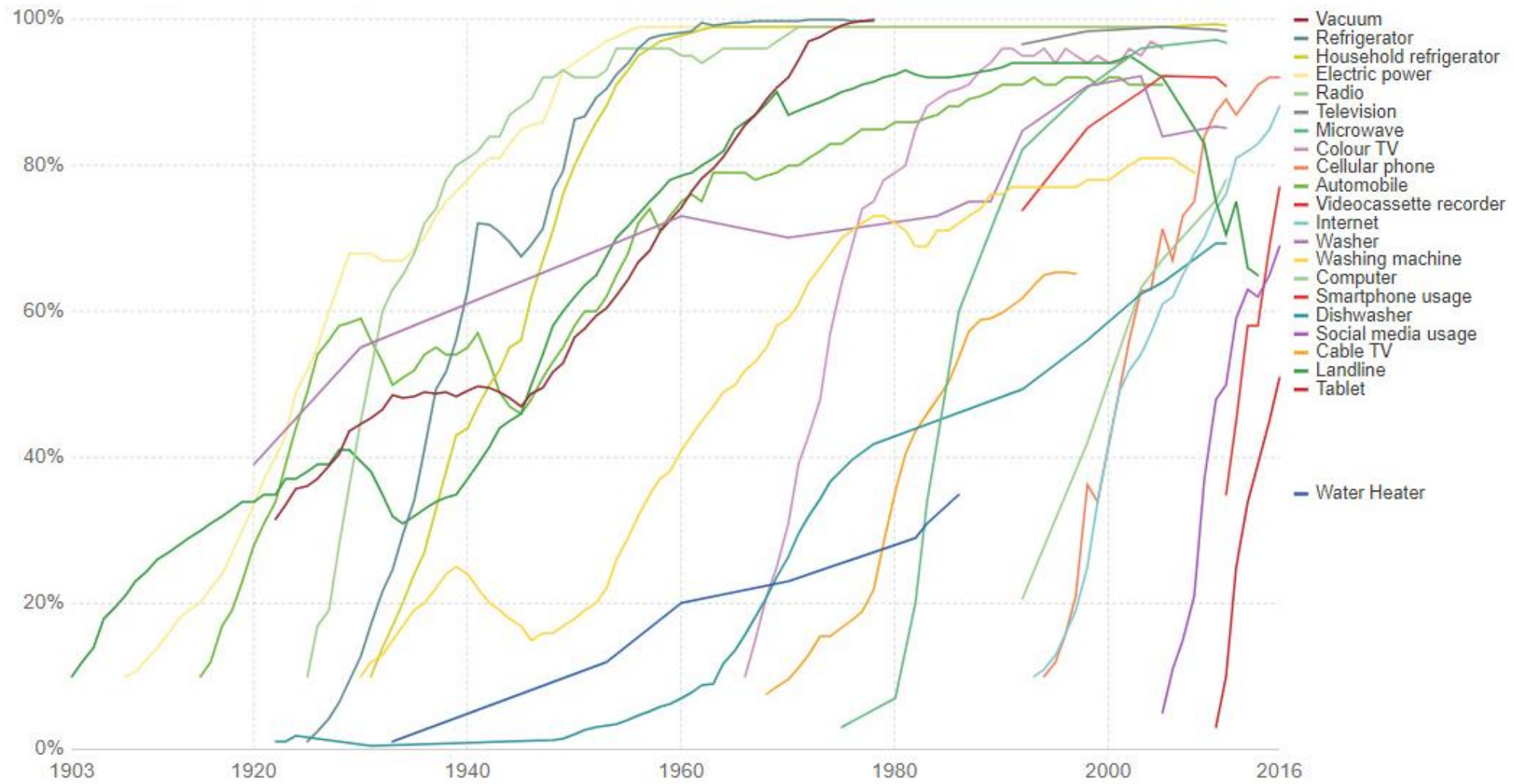




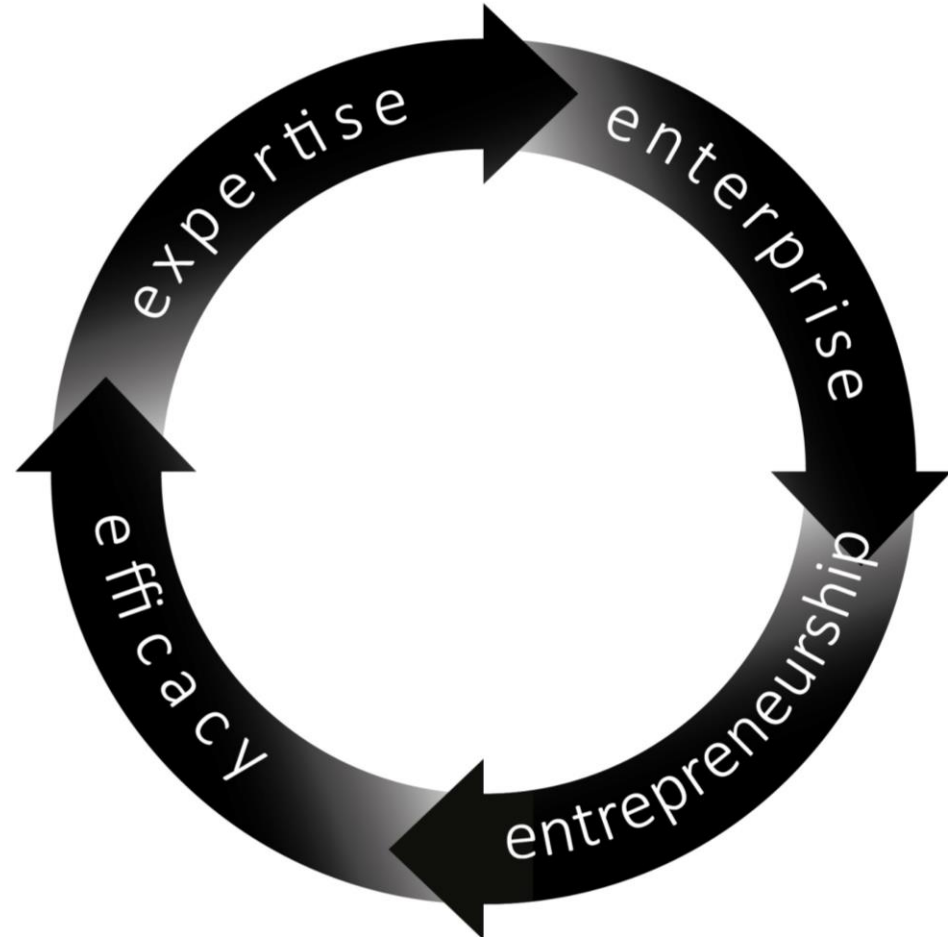
21st century

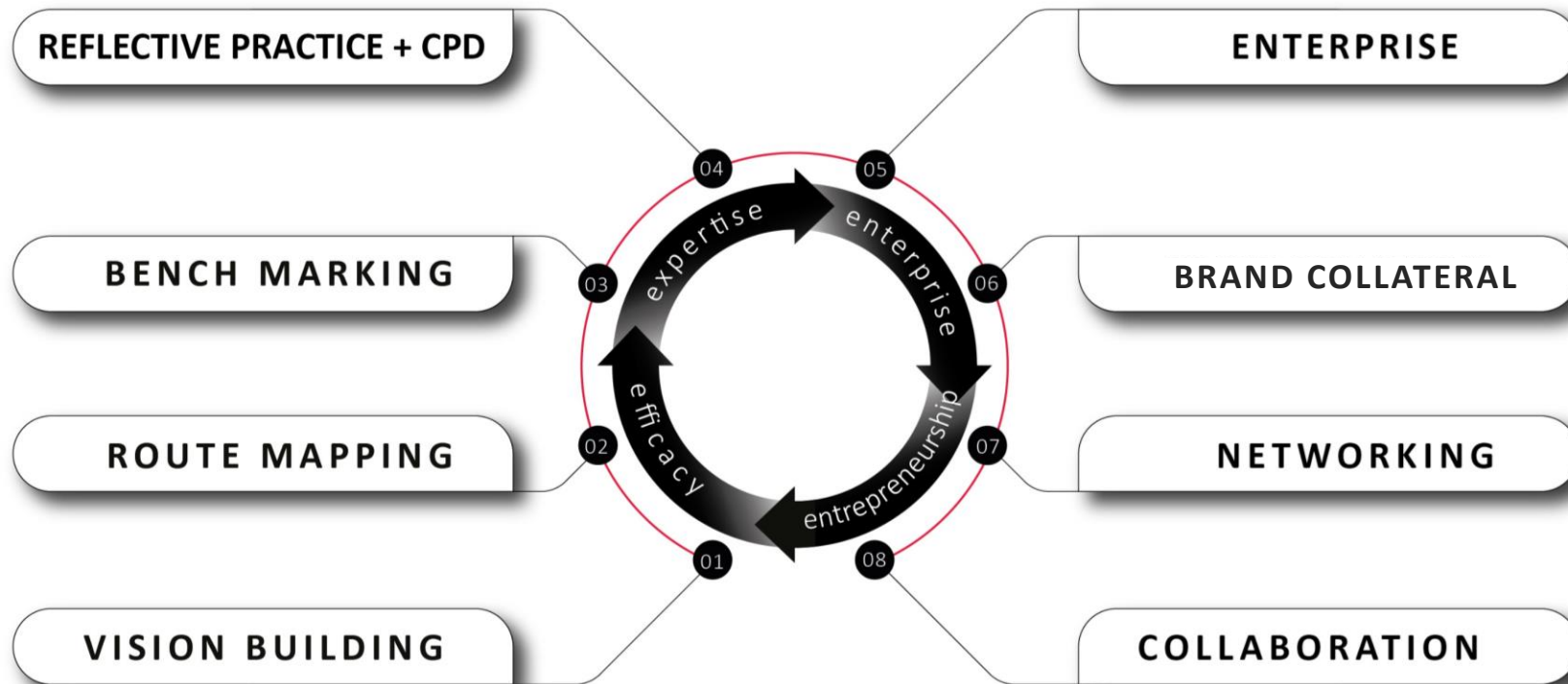
2050 nomadic design



product adoption curves

efficacy
expertise
enterprise
entrepreneurship

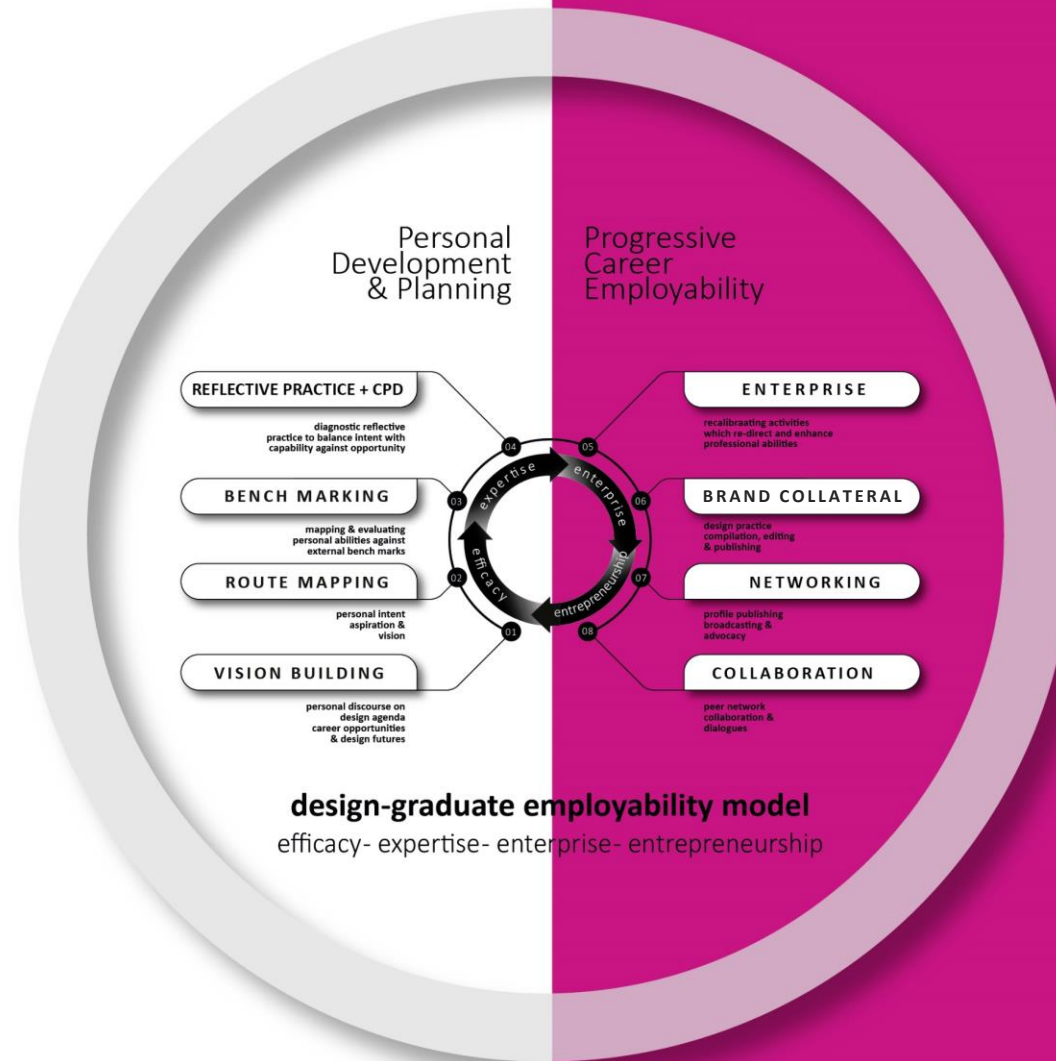




INTERNAL

SWOT

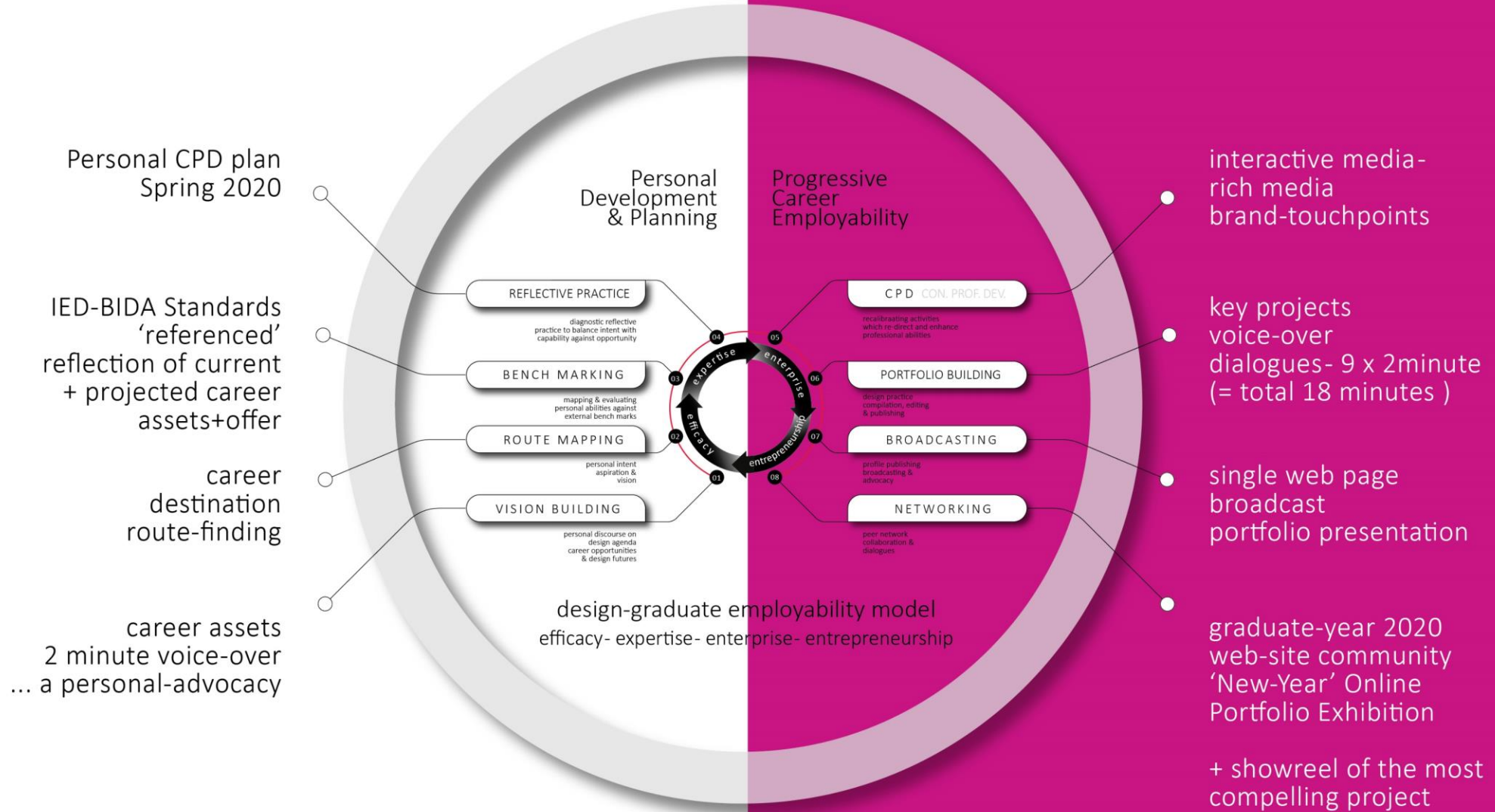
EXTERNAL



INTERNAL

SWOT

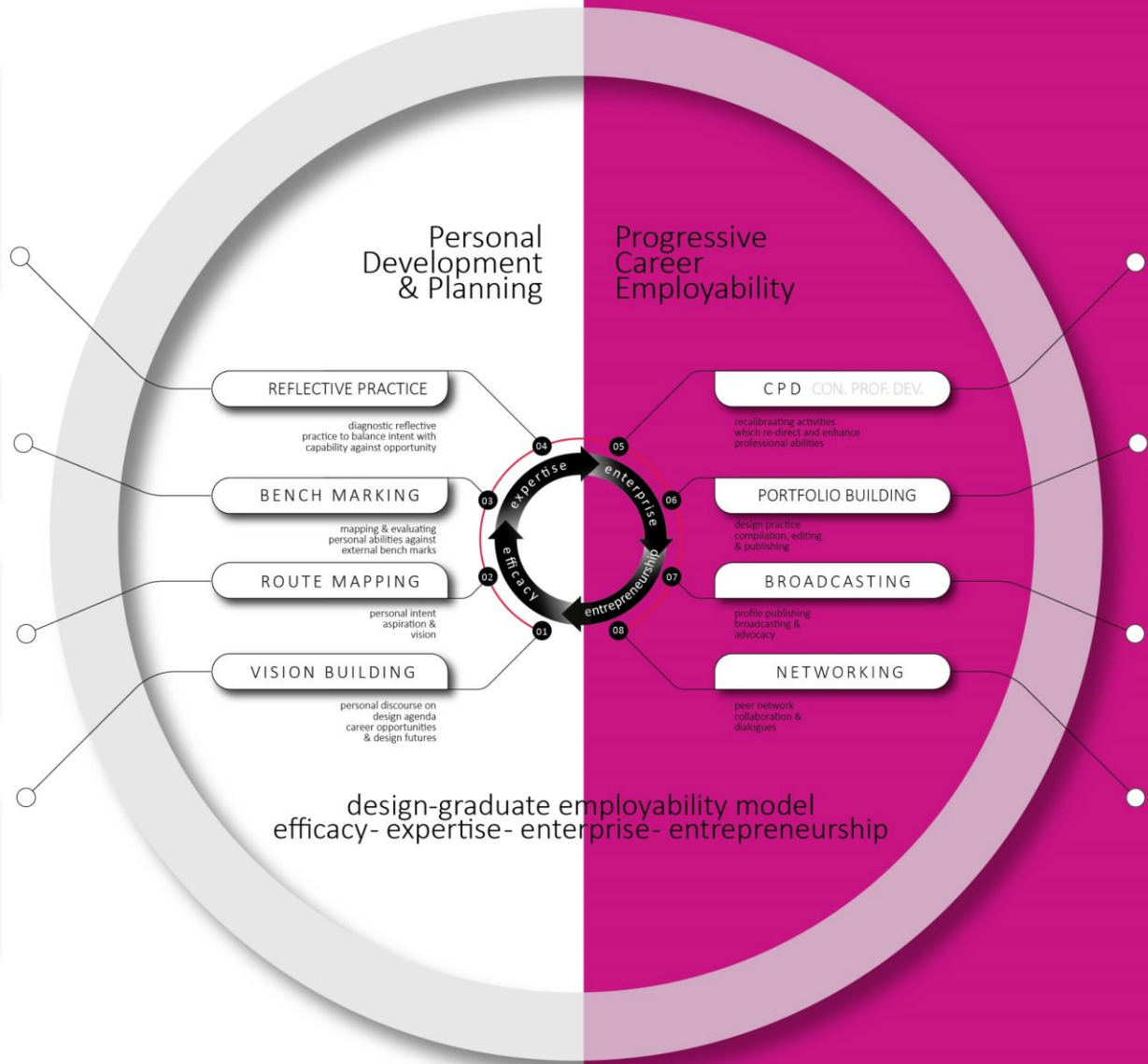
EXTERNAL



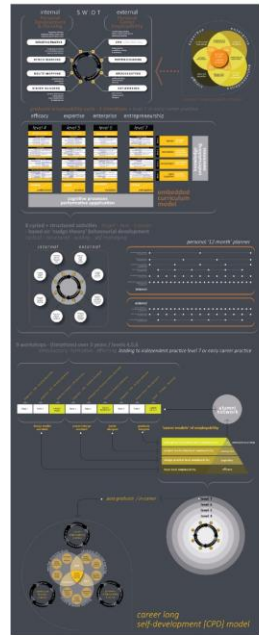
INTERNAL

SW OT

EXTERNAL



INTERNAL SWOT EXTERNAL



A collection of various design outputs. At the top is a row of eight panels showing different stages of a design process. Below this is a grid of circular icons representing different channels: 'project website', 'vehicle blog', 'project job list', 'VSD-UK', 'company presentation', 'publicity release', 'project report', and 'project portfolio'. To the right, there are several larger panels showing 'Degree Show banner image', 'print edition Graduate Yearbook DPS', 'All Journal Design Process', 'one set of 'art work' broadcast through 8 different channels', 'Project Triggers + Drivers Newspaper Article', 'product-proposal catalogue', 'proposal glorification show reel', 'creative process VCP', and 'Personal Graduate Year Book Digital Edition'.

2050 efficacy agenda

ethical purposefulness

real-time PRESTEL



BRUCE MAU MC:24

IOT

UE UX UI CX XR

Circular Economy

Wellbeing + Care

Happiness

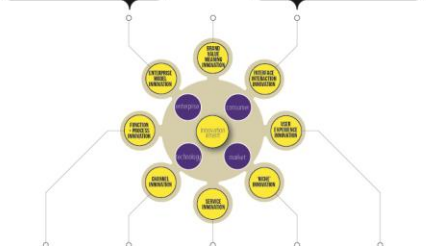
Water

Poverty – Food/Energy/IT

Data Driven Automation

Carbon Currency

TRENDS OF CHANGE - PHENOMENOLOGICAL SHIFT



NETWORK
 - **Open Invitation:** Encourage other people to work with you, whether they're individual experts or strangers in the crowd.
 - **Collaborative Consumption:** Leverage connectivity to upend traditional forms of ownership and change the way customers relate to your goods and services.
 - **Free-based:** Give away basic offerings for free to attract many users and then make money off of them in multiple ways.
 - **Radical Optimization:** Move beyond standard operational efficiencies to make it painful for other firms to compete with you.

INVESTMENT MODEL
 - **Predictive Business:** Mine data to model behaviors and breakdowns, allowing you to make promises, predict outcomes, and drive efficiencies for customers.
 - **Experience Ecosystem:** Build a seamless system of products, services, and extensions that interprets and corrects in consistently elegant and beguiling ways.

BRAND
 - **Platform-driven:** Develop signature offerings and experiences that you and others use to develop ecosystems of extensions.
 - **Customer Experience-driven:** Create environments that captivate and mesmerize customers, fostering new levels of engagement and commitment.
 - **Competency-driven Platform:** Open up key assets and capabilities and let others use them to power their own businesses.

PRODUCT PERFORMANCE
 - **Franchise:** Develop signature offerings and experiences that you and others use to develop ecosystems of extensions.
 - **Customer Experience-driven:** Create environments that captivate and mesmerize customers, fostering new levels of engagement and commitment.
 - **Competency-driven Platform:** Open up key assets and capabilities and let others use them to power their own businesses.

PRODUCT SYSTEM
 - **Franchise:** Develop signature offerings and experiences that you and others use to develop ecosystems of extensions.
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BUSINESS MODEL-DRIVEN

OPEN INVITATION
 Encourage other people to work with you, whether they're individual experts or strangers in the crowd.

COLLABORATIVE CONSUMPTION
 Leverage connectivity to upend traditional forms of ownership and change the way customers relate to your goods and services.

FREE-BASED
 Give away basic offerings for free to attract many users and then make money off of them in multiple ways.

RADICAL OPTIMIZATION
 Move beyond standard operational efficiencies to make it painful for other firms to compete with you.

PLATFORM-DRIVEN

FRANCHISE
 Develop signature offerings and experiences that you and others use to develop ecosystems of extensions.

EXCHANGE
 Establish hubs of activity and connect for any given resource, interest, market, or industry.

COLLABORATIVE CREATION
 Connect communities with canvases and toolkits that encourage them to create offerings for you.

COMPETENCY-DRIVEN PLATFORM
 Open up key assets and capabilities and let others use them to power their own businesses.

CUSTOMER EXPERIENCE-DRIVEN

STATUS-BASED
 Use subtle or explicit cues to confer status to your customers-creating elite groups that engage ravidly with your products and services.

IMMERSION
 Create environments that captivate and mesmerize customers, fostering new levels of engagement and commitment.

CONNECTED COMMUNITY
 Leverage the power of social ties to deepen experiences and encourage consumers to share common interests, activities, and the offerings that support them.

VALUES-BASED
 Make your products stand for something and foster a movement focusing on a particular constituency, cause, or reason for existing.

SIMPLIFICATION
 Radically ease the complicated, nagging, or arcane for customers-allowing them to accomplish things they simply couldn't have done before.

POLITICAL

The vote
 Will it be ever be universal?
 The 2004 US presidential primary campaigns cost a total of \$473.9M.
 This equated to the GDP of some developing nations.

Trading Blocs
 How many blocs will you join?
 More than one-third of world trade now takes place with its trading blocs.

Ethical Investment
 What do your investors really say about you?
 "I think corporations understand that the world is not asking them to do something different from their normal business, rather it is asking them to do their normal business differently."
 US Secretary General Bill Austin (2002)

Asianization
 When will learning mandarin or Hindi become compulsory?
 60% of the world's population live in Asia.
 38% of world's languages are from Asia.
 874M native Chinese speakers.
 222M people speak Hindi.
 207M people speak Bengali.

Compensation Culture
 What will you be paid for?
 In the UK national Health Service (NHS) medical error claims have risen from 1M in 1974 to 477M in 2003 equal to 22,700 extra nurses.

Global Governance
 What will be the birthplace of the first global president?
 In 1945 there were 51 member states in the UN, by 2002 this had risen to 193.

Food Legislation
 When will the "natural" food ban (pass)?
 Since August 2005, the food Supplement Directive (FSD) only allows products containing nutrients which are included on a specific positive list to be sold in EU countries. = The positive list prior to the use of particular food items of vitamins and minerals as well as their precise chemical formulation.

Surveillance Society
 How often will you be monitored?
 You can caught on camera up to 300 times a day in London.

91% of UK broadband users in 2008 had spyware lurking on their computers.

Stirle
 What are we fighting for?
 A quarter of the world's as many armed conflicts of recent years have involved a struggle for natural resources.
 The US military budget is almost as much as that of the rest of the world.

Pensions
 When can you retire?
 Pensions are the biggest item of social expenditure in all EU member States except Ireland, Denmark and Sweden.
 In 2008, pensions consumed one third of the Italian government spending.

ENVIRONMENT

Water
 How long will we continue to flush our toilets with drinking water?
 Only 1% of the planet water is fresh water.
 With in 30 years the majority of the world's population will not have enough potable water - aquifers that become depleted.

Waste
 When is your waste recycled - is your waste recycled?
 The UK generates 1.89M tonnes of waste every 2 minutes.

Endangered species
 How can we save the planet to ensure a future for endangered environments?
 Two thirds of threatened species are in countries which do not have the resources to protect them.

Urbanization
 Cities occupy 3% of the world's land surface, but house more than half the world's population.
 There is a daily migration to urban centers of 286,000 people per day.
 By 2015, 3.8 billion are projected to live over 30M people - all but 4 of these cities will be in less developed countries.

Energy Use
 When will buildings have to generate the energy they need - 300M buildings in the EU consume over 40% of Europe's energy and create over 40% CO2 emissions - this proportion is increasing.

Travel
 How long before air planes are empty?
 The world's commercial jet aircraft generate more than 6000 tonnes of CO2 per year.

Ecological Footprint
 How do you travel?
 Average world citizen has an ecological footprint of 2.8 global hectares.

USA - 38 hectares
UK 4.7 hectares
Russia 2.1 hectares
Spain 2.59 hectares
India 0.73 hectares
Bangladesh 0.33 hectares

Aviation
 What will happen when the industry is explicitly taxed?
 Aviation causes 8% of the greenhouse warming effect by burning the dirty fuel that is not taxed.

Consumption Localization
 Do you know the source of your lunch?
 67% of global grown produce is the fastest-growing segment of the food industry.
 Food for miles are accelerating the growth of Aviation CO2 emissions.

Disposable Quality Goods
 Are retailers to take back as many and all the goods as they sell?
 In the UK we dispose of 8 tonnes of electrical appliances over our lifetime.

SOCIAL

Future house holds
 Why are choosing to be alone?
 One third of a household in Western Europe are solitary dwellers, they spend 33% more per person than 2 adult households.

Identity
 How many of you are there?
 Identify fraud cost the US \$100 billion in 2007.
 53% of us lost weight - 1 in 6 have 4 friends made as half of known friends.

Personal productivity
 Who controls your freedom? How is your TV?
 Worldwide TV consumption average of 8 hours per day.
 European - Average some 30% of free time per day.

Holistic Wellness
 When will your accountant be your therapist?

Population distribution
 How will you share the earth with the billion neighbours?

Literacy
 38% of world adults can not read.

Fear
 Violence in the hands of family and friends is far deadlier than from a stranger.

Ageing Population
 85+ years old will reach 1 billion by 2020 - 73% of this age group live in the developed economies.

Communication
 France is 2 - 5 languages is now common among all French population.
 17 professional in Europe.

Education for all
 Children worldwide complete an average of 10 years of education - Primary school averages Africa - 6.4 years Latin America - 7.6 years USA & Europe - 12.5 years.

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TECHNOLOGY

Pervasive Computing
 RFID is at the top of point of being integrated into all consumer products.

Wearable Computing
 The PC generation was technology to communicate through it and to define our identities.

Preventive care
 When will it not be the doctor become obsolete?
 Predictive medicine will soon be available - diagnostic as a professional diagnosis.

Smart dust
 The internet has demonstrated the power of the network, smart dust will bring the same power of the connection to the physical world.

Biometrics
 Will it be the end of the organ?
 Identifying and controlling energy flows, self-regulate building systems, respond to users behaviors and emotions, distribute the data with their mobile lighting sound, & movement.

Connected communities
 How will the network of the network empower people, make authority accountable, stimulate enterprisers, social responsibility, manifest the identity of the human species.

Biotech Society
 What will you live your kind make in the garage?

Energy Infrastructure
 When will fossil fuels disappear from our energy mix?
 USA accounts for over 23% of global oil consumption.
 National plans to become the world's first oil hydrogen economy by 2030.

Atomic Engineering
 In 2015 \$600 million was invested in the US alone into research in engineering of nuclear at the nanoscale.

Biometric ID
 What is the implications of the loss of anonymity?

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ECONOMIC

Wealth gap
 In the last few years, urban disposable incomes in China have risen by an average of 8.6% a year compared to only a 1.8% growth in rural areas.
 The Chinese & Indian economies shall overtake the US as the world's largest economy with a the next decade.

Global trade
 When will it "made at home" be obsolete?
 US is the largest importing economy, EU is the world's leading exporter of merchandise - almost one fifth of the world's trade.

Outsourcing
 What will do the global knowledge economy when it takes over everything?

Migration
 Where will you go?
 Where is your opportunity?
 One in every 25 people in the world is an international migrant.
 Europe is home to the largest number of international migrants, followed by Russia and the US.

Demise realisation of luxury
 Will your desire for luxury land you in debt?
 Trading up in quality of possessions is always most important trend in people culture.

Consumer debt
 How long can credit be serviced?
 USA consumer debt is increasing by \$1M every five minutes.

China Trade
 When will you have your first yuan RMB bank account?
 Economic growth in the past decade was fastest in the developing economies of East Asia & Pacific - 8.7% in South Asia - 5.2% in China & India account for 70% of it's regions output.

Digital Currency
 What will you hide under your mattress?
 By 2011 ATM's will be providing 70% of all cash acquired by individuals.
 7 out of 10 kids to use ATM's for sourcing cash.

Containerised cargo
 Is there a cargo in it?
 The cost of moving empty containers around the world has reached an estimated total of at least \$5 billion per year.

Airport Shopping
 When will your local mall have someone parking?
 In 2004 the top five airport duty free stores in terms of retail turnover were London, Singapore, Amsterdam, Paris and Dubai.

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Profit Model

Premium

Price at a higher margin than competitors, usually for a superior product, offering, experience, service or brand.

Cost Leadership

Keep variable costs low and sell high volumes at low prices.

Scaled Transactions

Maximize margins by pursuing high volume, large scale transactions when unit costs are relatively fixed.

Microtransactions

Sell many items for as little as a dollar—or even only one cent—to drive impulse purchases at volume.

Forced Scarcity

Limit the supply of offerings available, by quantity, time frame or access, to drive up demand and/or prices.

Subscription

Create predictable cash flows by charging customers up front (a one time or recurring fee) to have access to the product/service over time.

Membership

Charge a time-based payment to permit access to locations, offerings, or services that non-members don't have.

Installed Base

Offer a “core” product for slim margins (or even a loss) to drive demand and loyalty; then realize profit on additional products and services.

Switchboard

Connect multiple sellers with multiple buyers; the more buyers and sellers who join, the more valuable the switchboard.

Auction

Allow a market—and its users—to set the price for goods and services.

User-Defined

Invite customers to set a price they wish to pay.

Freemium

Offer basic services for free, while charging a premium for advanced or special features.

Flexible Pricing

Vary prices for an offering based on demand.

Float

Receive payment prior to building the offering—and use the cash to earn interest prior to making margins.

Financing

Capture revenue not directly from the sale of a product, but from structured payment plans and after-sale interest.

Ad-Supported

Provide content/services for free to one party while selling listeners, viewers or “eyeballs” to another party.

Licensing

Grant permission to some other group or individual to use your offering in a defined way for a specified payment.

Metered Use

Allow customers to pay for only what they use.

Bundled Pricing

Sell in a single transaction two or more items that could be sold as standalone offerings.

Disaggregate Pricing

Allow customers to buy exactly—and only—what they want.

Risk Sharing

Waive standard fees/costs if certain metrics aren't achieved, but receive outside gains when they are.

Network

Merger/Acquisition

Combine two or more entities to gain access to capabilities and assets.

Consolidation

Acquire multiple companies in the same market or complementary markets.

Open Innovation

Obtain access to processes or patents from other companies to leverage, extend, and build on expertise and/or do the same with internal IP and processes.

Secondary Markets

Connect waste streams, by-products, or other alternative offerings to those who want them.

Supply Chain Integration

Coordinate and integrate information and/or processes across a company or functions of the supply chain.

Complementary Partnering

Leverage assets by sharing them with companies that serve similar markets but offer different products and services.

Alliances

Share risks and revenues to jointly improve individual competitive advantage.

Franchising

License business principles, processes, and brand to paying partners.

Coopetition

Join forces with someone who would normally be your competitor to achieve a common goal.

Collaboration

Partner with others for mutual benefit.

Structure

Organizational Design

Make form follow function and align infrastructure with core qualities and business processes.

Incentive Systems

Offer rewards (financial or non-financial) to provide motivation for a particular course of action.

IT Integration

Integrate technology resources and applications.

Competency Center

Cluster resources, practices and expertise into support centers that increase efficiency and effectiveness across the broader organization.

Outsourcing

Assign responsibility for developing or maintaining a system to a vendor.

Corporate University

Provide job-specific or company-specific training for managers.

Decentralized Management

Distribute decision-making governance closer to the customer or other key business interfaces.

Knowledge Management

Share relevant information internally to reduce redundancy and improve job performance.

Asset Standardization

Reduce operating costs and increase connectivity and modularity by standardizing your assets.

Process

Process Standardization

Use common products, processes, procedures, and policies to reduce complexity, costs, and errors.

Localization

Adapt an offering, process, or experience to target a culture or region.

Process Efficiency

Create or produce more while using fewer resources—measured in materials, energy consumption or time.

Flexible Manufacturing

Use a production system that can rapidly react to changes and still operate efficiently.

Process Automation

Apply tools and infrastructure to manage routine activities in order to free up employees.

Crowdsourcing

Outsource repetitive or challenging work to a large group of semi-organized individuals.

On-Demand Production

Produce items after an order has been received to avoid carrying costs of inventory.

Lean Production

Reduce waste and cost in your manufacturing process and other operations.

Logistics Systems

Manage the flow of goods, information and other resources between the point of origin and the point of use.

Strategic Design

Employ a purposeful approach that manifests itself consistently across offerings, brands, and experiences.

Intellectual Property

Protect an idea that has commercial value—such as a recipe or industrial process—with legal tools like patents.

User Generated

Put your users to work in creating and curating content that powers your offerings.

Predictive Analytics

Model past performance data and predict future outcomes to design and price offerings accordingly.

Product Performance

Superior Product

Develop an offering of exceptional design, quality, and/or experience.

Ease of Use

Make your product simple, intuitive and comfortable to use.

Engaging Functionality

Provide an unexpected or newsworthy experiential component that elevates the customer interaction.

Safety

Increase the customer's level of confidence and security.

Feature Aggregation

Combine existing features found across offerings into a single offering.

Added Functionality

Add new functionality to an existing offering.

Performance Simplification

Omit superfluous details, features, and interactions to reduce complexity.

Environmental Sensitivity

Provide offerings that do no harm—or relatively less harm—to the environment.

Conservation

Design your product so that customers can reduce their use of energy or materials.

Customization

Enable altering of the product or service to suit individual requirements or specifications.

Focus

Design an offering specifically for a particular audience at the expense of others.

Styling

Impart a style, fashion or image.

Product System

Complements

Sell additional related or ancillary products or services to a customer.

Extensions/Plug-ins

Allow first- or third-party additions that add functionality.

Product Bundling

Offer several products for sale as one combined product.

Modular Systems

Provide a set of individual components that can be used independently, but gain utility when combined.

Product/Service Platforms

Develop systems that connect with other, partner products and services to create a holistic offering.

Integrated Offering

Combine otherwise discrete components into a complete experience.

Service

Try Before You Buy

Let customers test and experience an offering before investing in it.

Guarantee

Remove customer risk of lost money or time stemming from product failure or purchase error.

Loyalty Programs

Provide benefits and/or discounts to frequent and high-value customers.

Added Value

Include an additional service/function as part of the base price.

Concierge

Provide premium service by taking on tasks for which customers don't have time.

Total Experience Management

Provide thoughtful, holistic management of the consumer experience across an offering's lifecycle.

Supplementary Service

Offer ancillary services that fit with your offering.

Superior Service

Provide service(s) of higher quality, efficacy, or with a better experience than any competitor.

Personalized Service

Use the customer's own information to provide perfectly calibrated service.

User Communities/Support Systems

Provide a communal resource for product/service support, use and extension.

Lease or Loan

Let customers pay over time to lower upfront costs.

Self-Service

Provide users with control over activities that would otherwise require an intermediary to complete.

Channel

Diversification

Add and expand into new or different channels.

Flagship Store

Create a store to showcase quintessential brand and product attributes.

Go Direct

Skip traditional retail channels and connect directly with customers.

Non-Traditional Channels

Employ novel and relevant avenues to reach customers.

Pop-up Presence

Create a noteworthy but temporary environment to showcase and/or sell offerings.

Indirect Distribution

Use others as resellers who take ownership over delivering the offering to the final user.

Multi-Level Marketing

Sell bulk or packaged goods to an affiliated but independent sales force that turns around and sells it for you.

Cross-selling

Place products, services, or information that will enhance an experience in situations where customers are likely to want to access them.

On-Demand

Deliver goods in real-time whenever or wherever they are desired.

Context Specific

Offer timely access to goods that are appropriate for a specific location, occasion, or situation.

Experience Center

Create a space that encourages your customers to interact with your offerings—but purchase them through a different (and often lower-cost) channel.

Brand

Co-Branding

Combine brands to mutually reinforce key attributes or enhance the credibility of an offering.

Brand Leverage

“Lend” your credibility and allow others to use your name—thus extending your brand's reach.

Private Label

Provide goods made by others under your company's brand.

Brand Extension

Offer a new product or service under the umbrella of an existing brand.

Component Branding

Brand an integral component to make a final offering appear more valuable.

Transparency

Let customers see into your operations and participate with your brand and offerings.

Values Alignment

Make your brand stand for a big idea or a set of values and express them consistently in all aspects of your company.

Certification

Develop a brand or mark that signifies and ensures certain characteristics in third-party offerings.

Customer Engagement

Process Automation

Remove the burden of repetitive tasks from the user to simplify life and make new experiences seem magical.

Experience Simplification

Reduce complexity and focus on delivering specific experiences exceptionally well.

Curation

Use a distinct point of view to separate the proverbial wheat from the chaff—and in the process create a strong identity for yourself and your followers.

Experience Enabling

Extend the realm of what's possible to offer a previously improbable experience.

Mastery

Help customers to obtain great skill or deep knowledge of some activity or subject.

Autonomy and Authority

Grant users the power to use your offerings to shape their own experience.

Community and Belonging

Facilitate visceral connections to make people feel they are part of a group or movement.

Personalization

Alter a standard offering to allow the projection of the customer's identity.

Whimsy and Personality

Humanize your offering with small flourishes of on-brand, on-message ways of seeming alive.

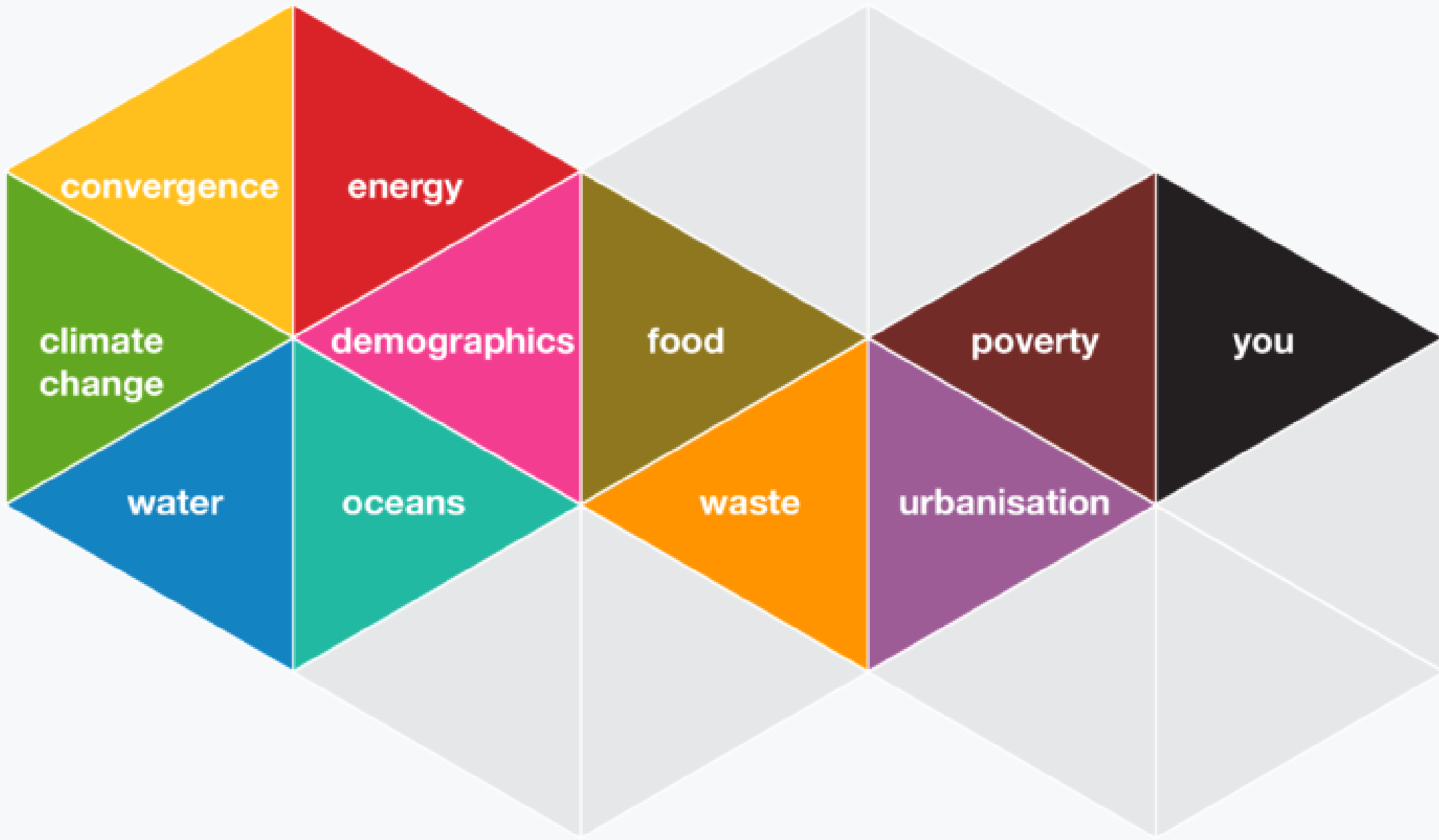
Status and Recognition

Offer cues that infer meaning, allowing users—and those who interact with them—to develop and nurture aspects of their identity.

CONFIGURATION

OFFERING

EXPERIENCE



convergence

energy

climate
change

demographics

food

poverty

you

water

oceans

waste

urbanisation

2050 expertise agenda

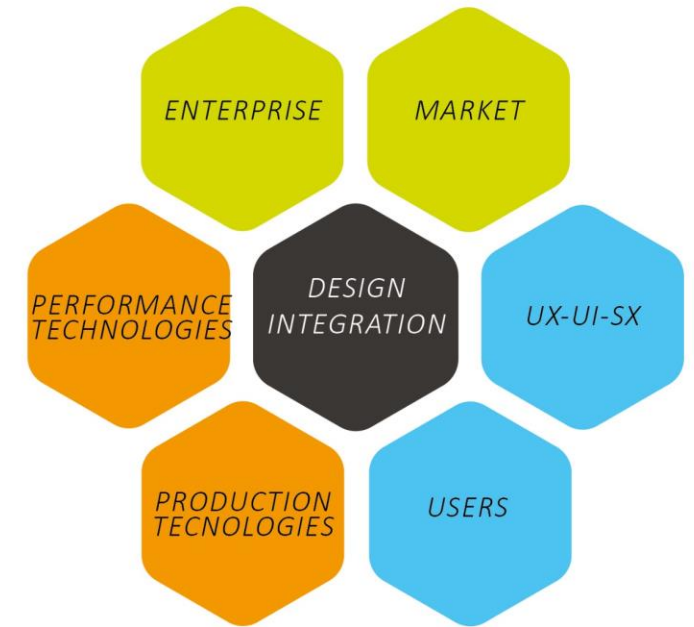
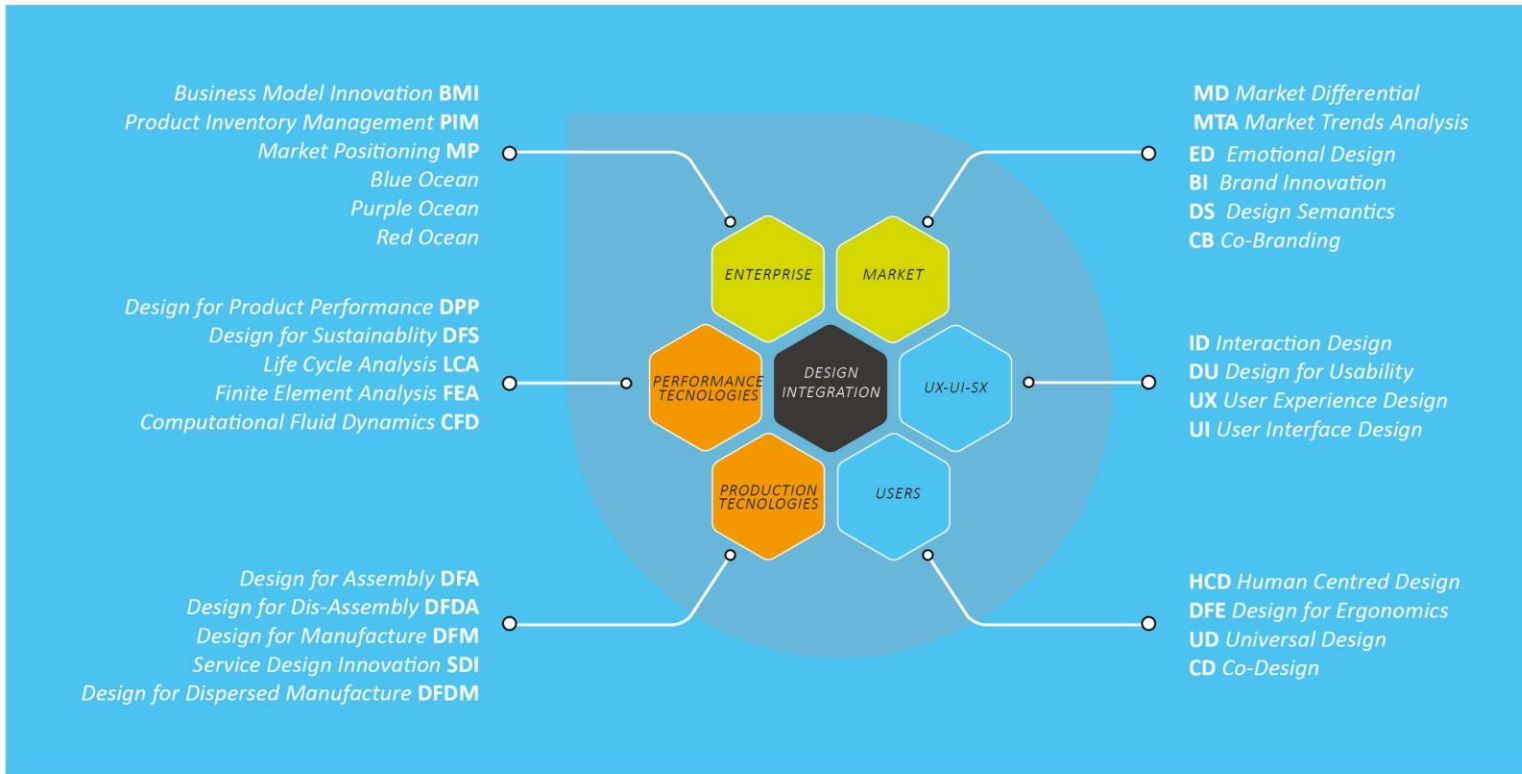
continual professional nascence

UX - UI - CX – **XR**

business / technology / people

shareable-measurable process

urban metabolism



generation

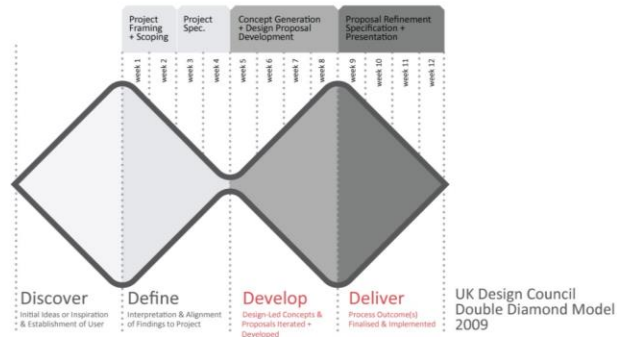
development

proposal

specification



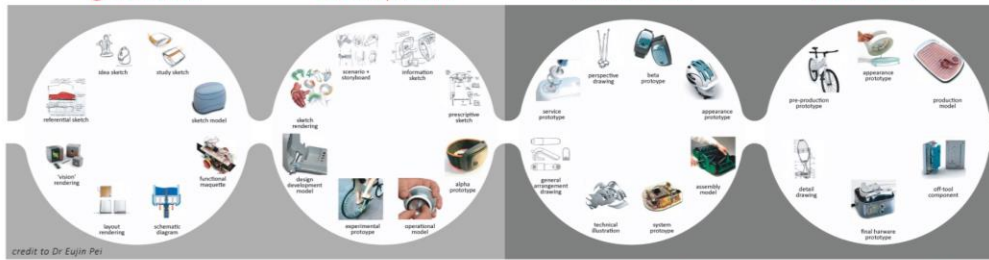
discursive expertise



concept proposal generation design proposal development design proposal refinement detailed proposal specification

form

function



credit to Dr Euijin Pei

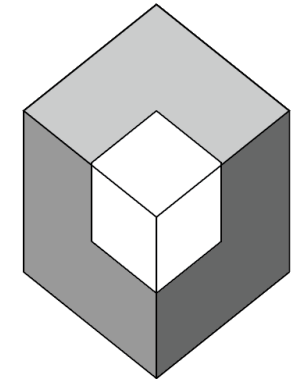
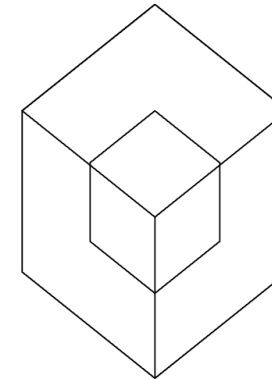
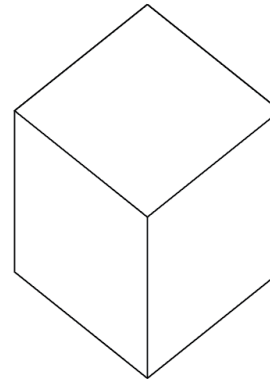
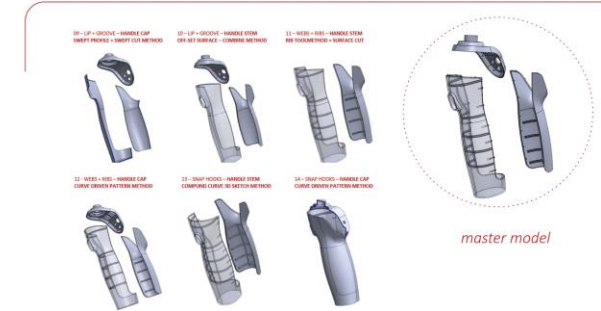
parametric virtual prototyping



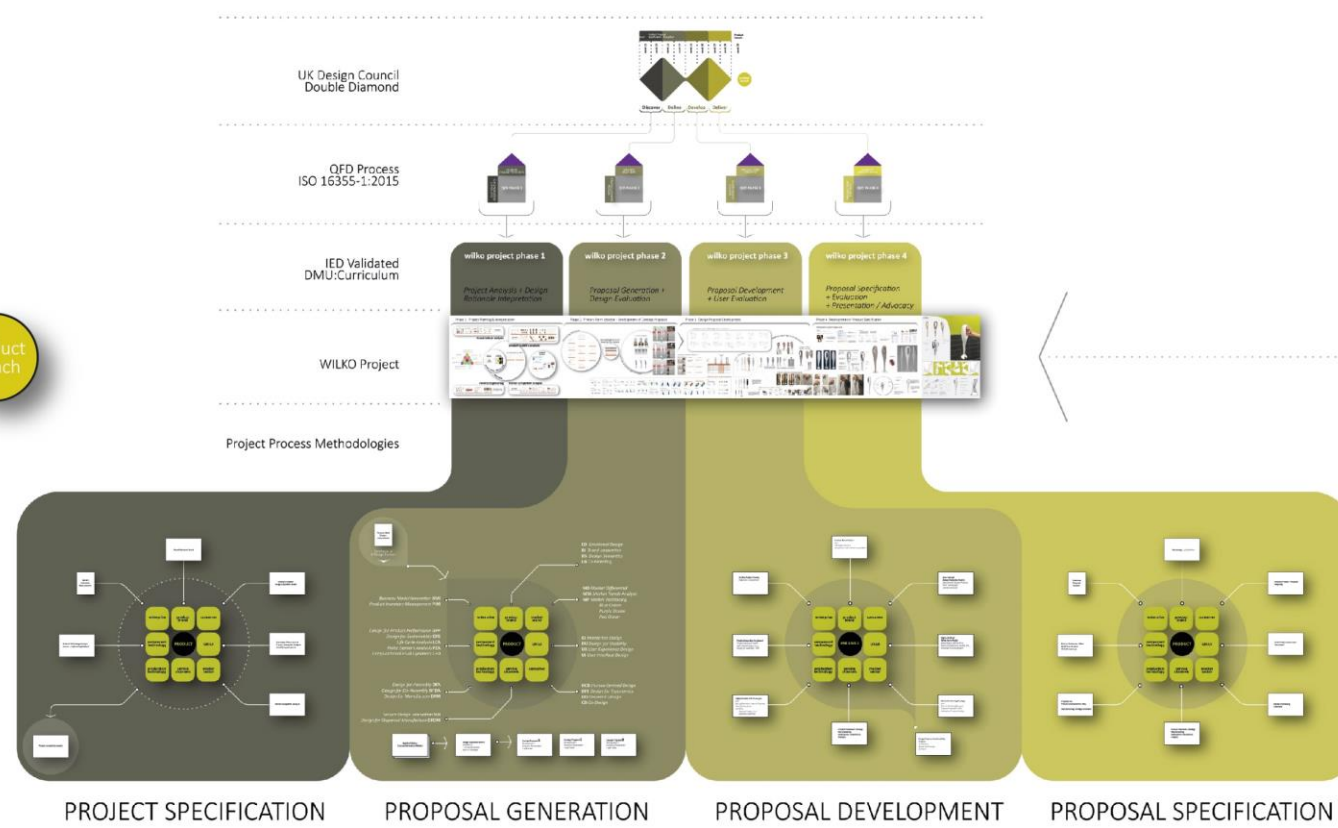
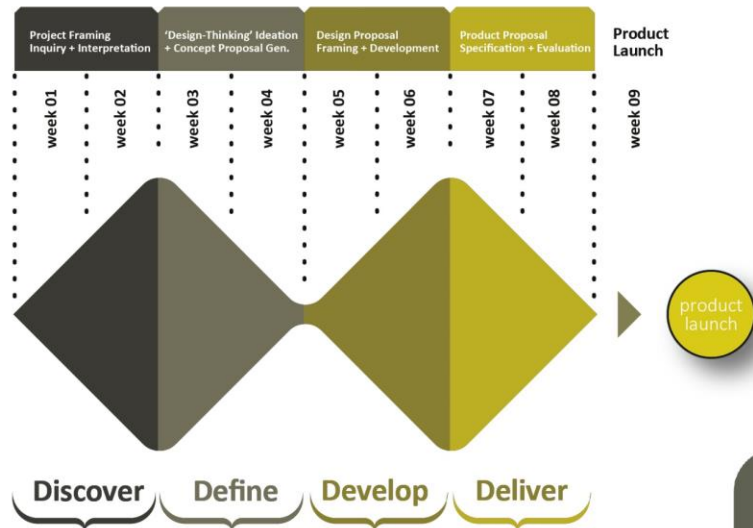
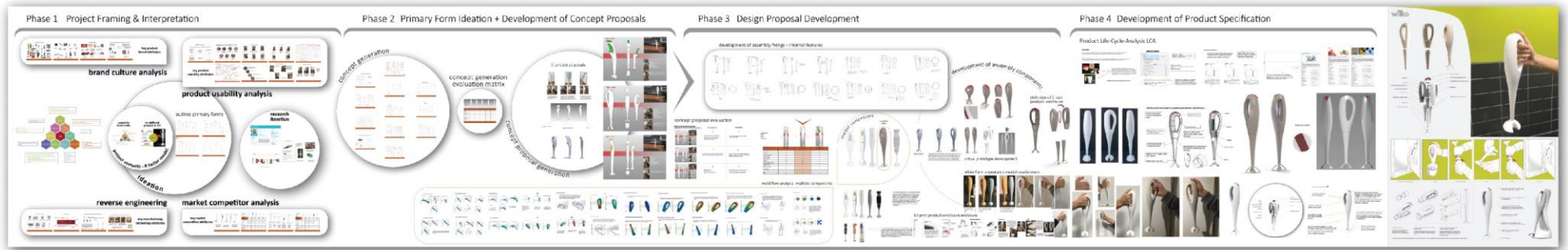
design reference input

session 1 primary form / subset forms / secondary features / assembly parts 10+ hours

session 2 lip groove / snap hooks + grooves / internal webs + ribs / master model 10+ hours



- FORM
- FEATURES
- FINISHES



IED accreditation validation 2016

2050 enterprise agenda
systemised collaboration
plausible + relevant 'truths'

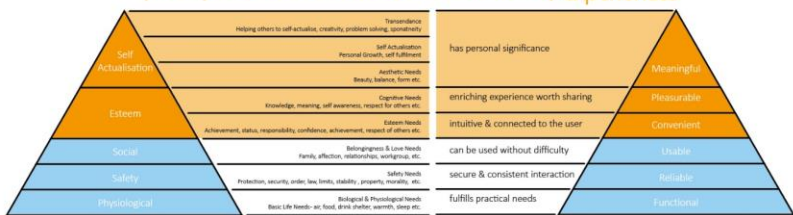
"It is not enough that we build products that function, that are understandable and usable - we also need to build products that bring joy and excitement, pleasure and joy, and yes beauty, to people's lives."

Donald Norman

creating pleasurable interfaces

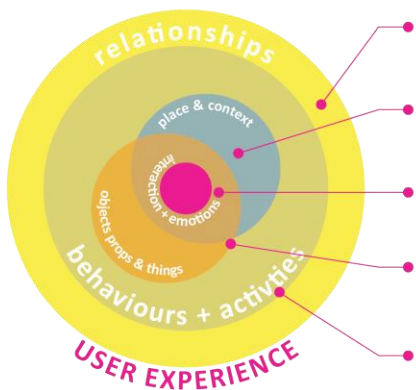
progressing from product tasks to product experiences

people, activities, context ◀ focused on experiences



Maslow's Hierarchy of Needs

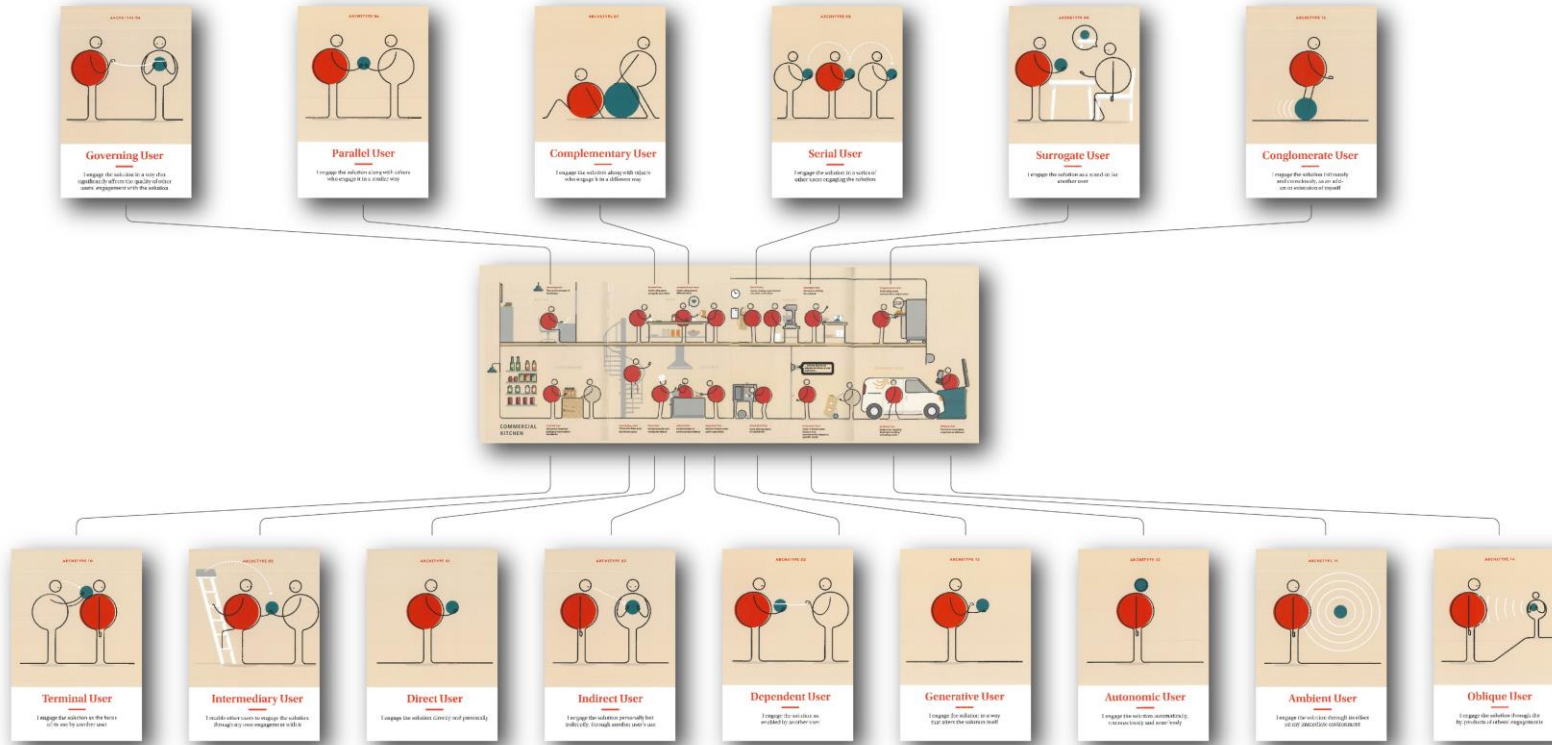
focused on tasks
features, facilities, functions



- 'relationships'
- 'place-context'
- 'experience-emotions'
- 'objects-props-things'
- 'behaviours-activities'



scoping for focus	scanning user behaviours	prototyping user interactions	evaluation of proposals
<p>Define and find the best types of people to study.</p> <p>Verify that the 'people' meet the criteria of the brief.</p>	<p>Uses a trained eye to probe, ask questions and observe small details and nuances.</p> <p>Makes observations of what's taking place.</p>	<p>Leads the analysis by grounding fieldwork in research training and outside experience.</p> <p>Transform observations and data into a coherent and compelling story.</p>	<p>Tells the story in a way that helps people embrace recommendations and create a shared vision.</p> <p>Creates a visual narrative to accelerate knowledge transfer and buy-in within an organization.</p>
<ul style="list-style-type: none"> behavioural technology cross cultural comparisons long-range forecasts Historical Analysis time lapse video focus group five whys? cognitive maps flow analysis card sort secondary research predict next years headlines fly on the wall shadowing a day in the life of 	<ul style="list-style-type: none"> anthropometric analysis cultural probes card sort foreign responsiveness conceptual landscape behaviour sampling role-playing extreme user interviews narration extreme user interviews draw the experience be your customer error analysis competitor product survey empathy tools character profiles guided tours camera journal rapid ethnography 	<ul style="list-style-type: none"> affinity diagrams word concept association scale modelling social network mapping collage paper prototyping experience prototype personal inventory try it yourself quick & dirty prototyping surveys & questionnaires 	<ul style="list-style-type: none"> behavioural mapping tracking map cognitive task analysis still photo survey activity analysis



ECO-TO-GO 2016-20 multiple stakeholders FOOD SERVICES



STAKEHOLDER GROUPS

SYSTEM BASED INTERACTION

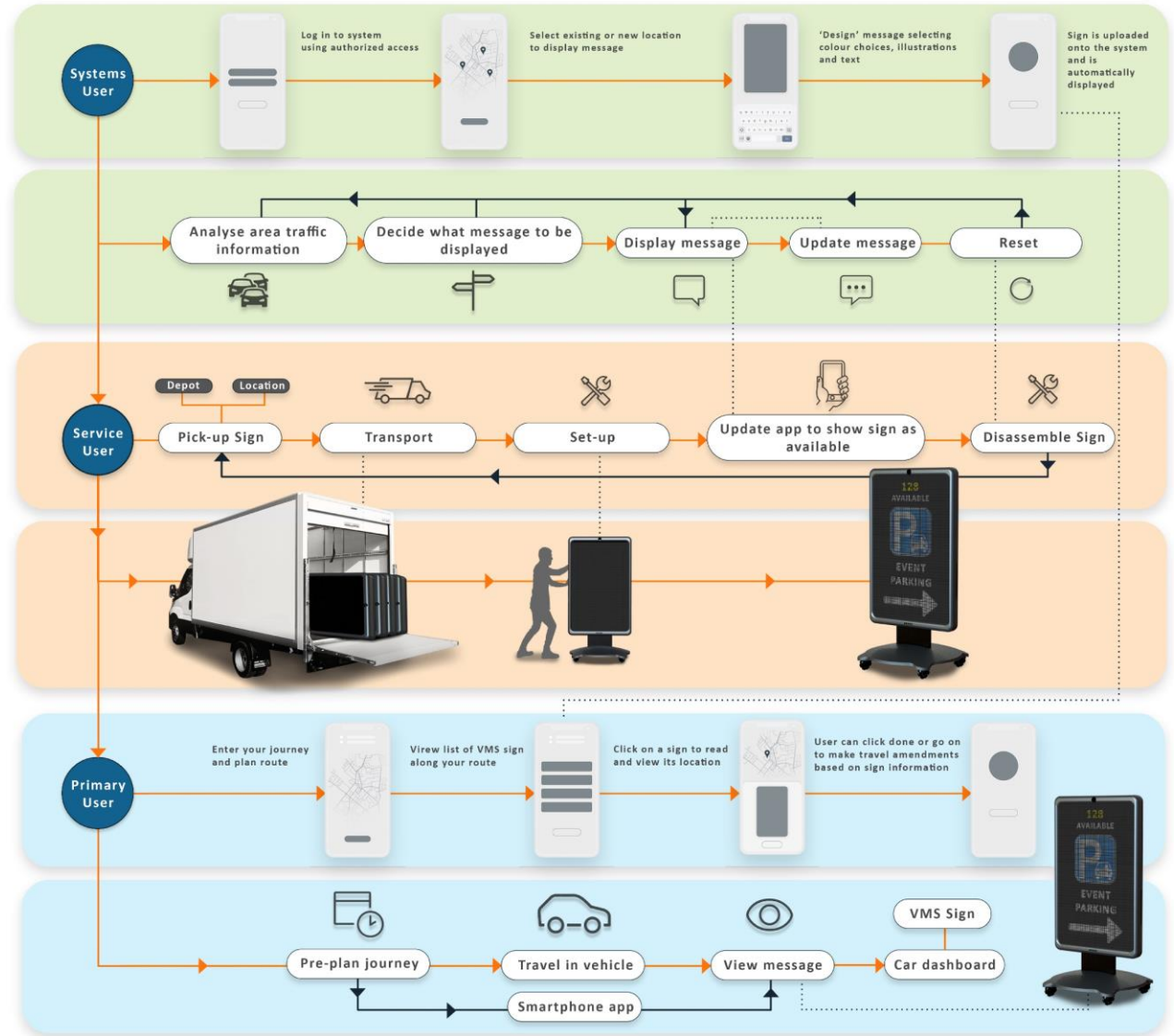
- NATIONAL TRAFFIC CONTROL
- REGIONAL TRAFFIC CONTROL
- HIGHWAY POLICE
- INCIDENT MANAGEMENT UNIT

SERVICE BASED INTERACTION

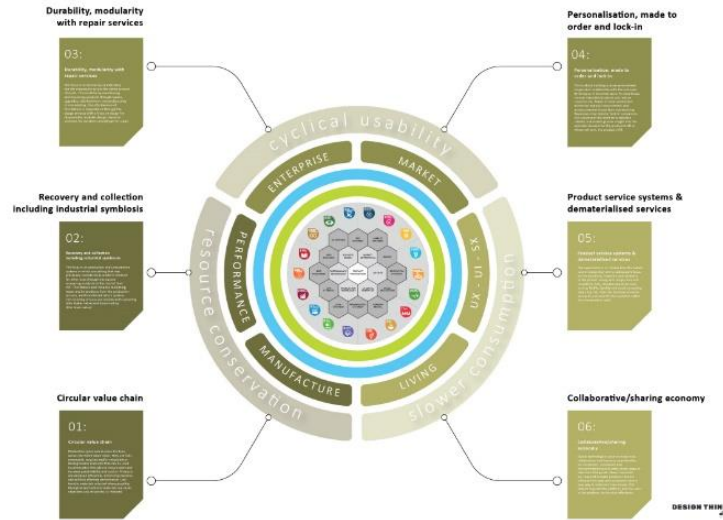
- 'VARIABLE-MESSAG-SERVICE' COMPANY
- CITY COUNCIL TRAFFIC TRANSPORT
- DISTRICT POLICE
- DISTRICT PUBLIC TRANSPORT
- passenger transport executives PTE's
- EVENT ORGANISERS

PRODUCT BASED INTERACTION

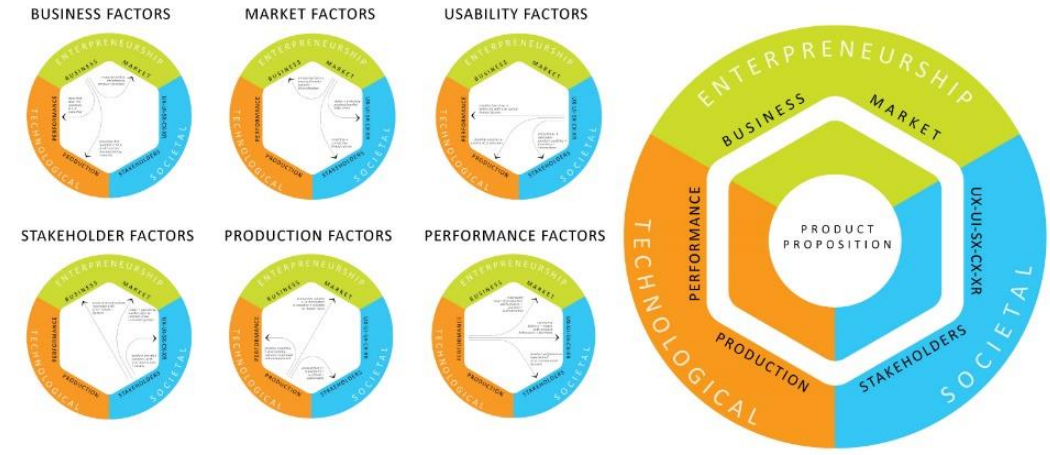
- MOTORISTS
- PUBLIC TRANSPORT USERS
- PEDESTRIANS
- CITY COMMUNITY



six key strategies for design driven sustainability



ENTREPRENEURSHIP	BUSINESS MARKET	product inventory / available R+D expertise / ROI enterprise future / viable differential / brand culture
SOCIETAL	UX/UI/SX/CX/XR STAKEHOLDERS	desirable usability / feasible quality / viable function market consumers / user motivations / brand affinity
TECHNOLOGICAL	PRODUCTION PERFORMANCE	feasible assembly / adaptive + scalable / sustainable + ethical extendable performance / balance with UX + UI / convivial-tools

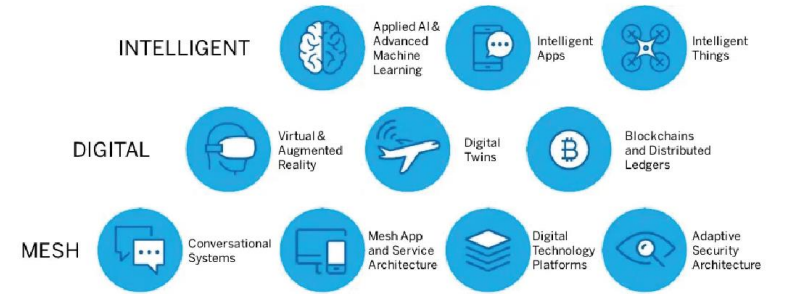
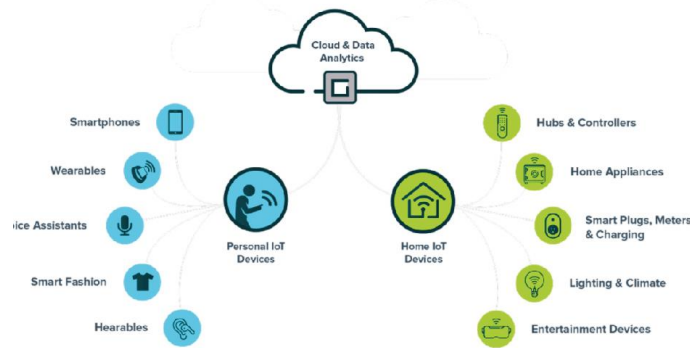


FEASIBLE		VIABLE		DESIRABLE	
resource conservation		cyclical usability		slower consumption	
01: Circular value chain	02: Recovery and collection including industrial symbiosis	03: Durability, modularity with repair services	04: Personalisation, made to order and lock-in	05: Product service systems & dematerialised services	06: Collaborative/sharing economy
MANUFACTURE	PERFORMANCE	ENTERPRISE	MARKET	UX UI SX	LIVING
MANUFACTURE	PERFORMANCE	ENTERPRISE	MARKET	UX UI SX	LIVING

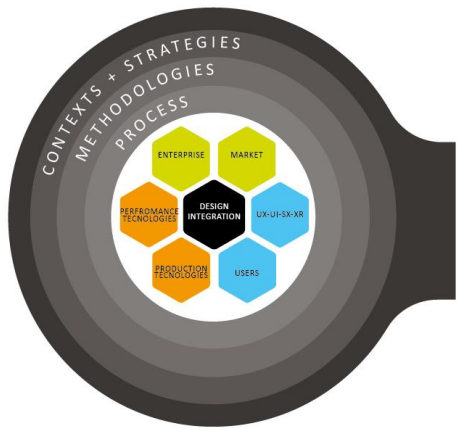


18 guiding principles of the circular economy

- Principle 1: Design with a purpose
- Principle 2: Design for longevity
- Principle 3: Design for resource efficiency
- Principle 4: Commit to transparency and 'labelling'
- Principle 5: Design for biodegradability
- Principle 6: Design for recyclability
- Principle 7: Source and produce more locally
- Principle 8: Source and produce without toxicity
- Principle 9: Source and produce with efficiency
- Principle 10: Source and produce with renewables
- Principle 11: Source and produce with good ethics
- Principle 12: Provide services to support long life
- Principle 13: Sustain ownership through product services
- Principle 14: Reuse, recycle or compost all remains
- Principle 15: Collaborate well and widely
- Principle 16: Use, wash and repair with care
- Principle 17: Consider multiple use, secondhand or redesign versus new
- Principle 18: Buy quality as opposed to quantity



Fourth Industrial Revolution (Industry 4.0)



MICRO-MESO-META
BLENDED LEARNING
context + strategies
methodologies
process
across 6 core design factors

- TERM 4
- TERM 4
- TERM 3
- TERM 3
- TERM 2
- TERM 2
- TERM 1
- TERM 1

	400 hrs professional design-practice			
INDUSTRY PRACTICE 02				
INDUSTRY PRACTICE 01				
data flow design	augmented functions	societal-corporate shift	complex systems - behaviour change	XR
service design	multi-user functions	relational-collaboration	behaviour adoption / socialability	CX
interface design	modal functions	understandability	cognition / perception / learnability	UC
experience design	behavioural functions	emotional-experiential	emotion / semantics / ethnography	UX
interaction design	feature functions	userability	skills / learnability / ergonomic	UI
form design	form functions	pragmatism	mechanic / semiotics / anthropometrics	UE
product-design themes	design focus	design attributes	design principles	



Based on **BS 8887-1:2006**-section 7

Online-Retail Distribution Model 30,000 units

Product Price £35:00
Profit Margin £17:00

$$P_t - P_m = P_c + \left[\left(C_{dev} + C_{mkt} \right) \div Q_{at} \right] + C_{mat} + C_{ma} + C_{de}$$

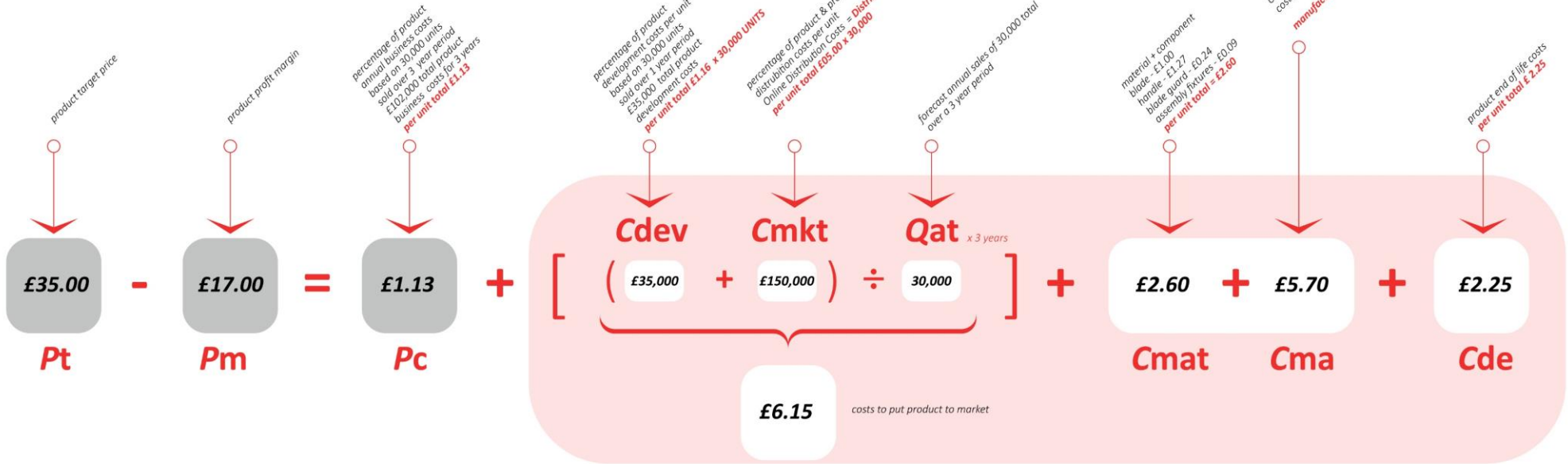
target price product profit margin business costs development costs costs to market volume of sales material + component costs manufacturing costs end of life costs

$$\mathbf{\text{\pounds}18.00 \text{ approx}}$$

factory price per unit

$$= \mathbf{\text{\pounds}1.30} + \left[\frac{\mathbf{\text{\pounds}35,000} + \mathbf{\text{\pounds}150,000}}{\mathbf{30,000}} \right] + \mathbf{\text{\pounds}2.60} + \mathbf{\text{\pounds}5.70} + \mathbf{\text{\pounds}2.25}$$

P_c *C_{mat}* *C_{ma}* *C_{de}*



2050 entrepreneurship agenda

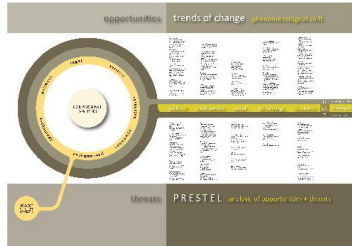
meaningful patterns

systemic progress

OPPORTUNITIES + THREATS

PRESTEL

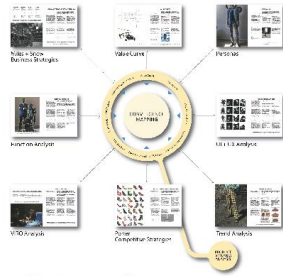
- politics
- resources
- economic
- social
- technology
- environment
- legal



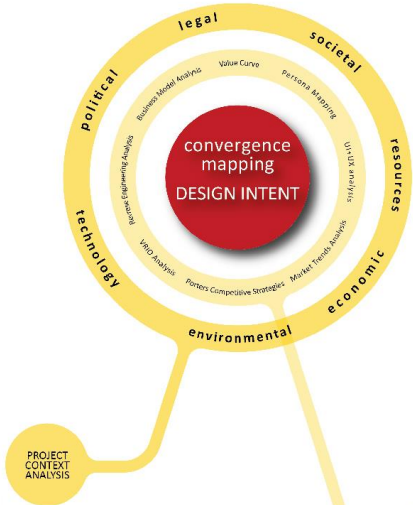
external project context change

STRENGTHS + WEAKNESSES

'methodology' based 8 Design Factor Analysis

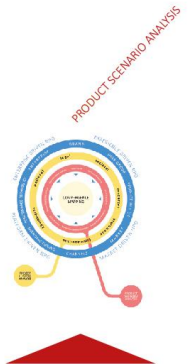
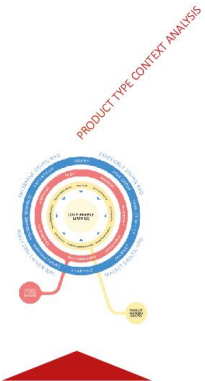
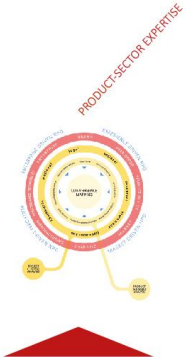


internal product scenario change



PROJECT CONTEXT ANALYSIS

PRODUCT SCENARIO ANALYSIS



NPD STRATEGY
Technology Platform
UX/UI:Service
Enterprise Model
Marketing Mix

NPD STRATEGY
Technology Platform
UX/UI:Service
Enterprise Model
Marketing Mix

PRESTEL ANALYSIS
Trends
Drivers
Triggers

DESIGN FACTOR ANALYSIS
Design Insights
Design Constraints
Design Scopes

CONVERGENT MAPPING
Key Design Attributes
Statement of Intent
NPD Road Map

meta

meso

micro

sector-expertise knowledge-sets

DESIGN INSIGHTS **SWOT** ANALYSIS

DESIGN BRIEF



Miles + Snow Business Strategies



Value Curve



Personas



Function Analysis



UI + UX Analysis



VIRO Analysis



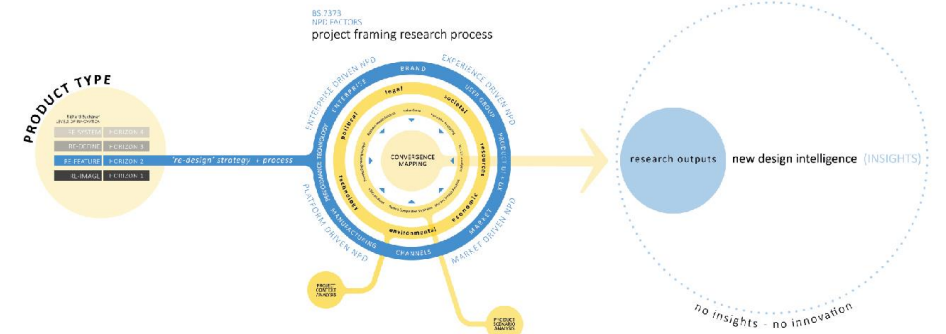
Porter Competitive Strategies



Trend Analysis

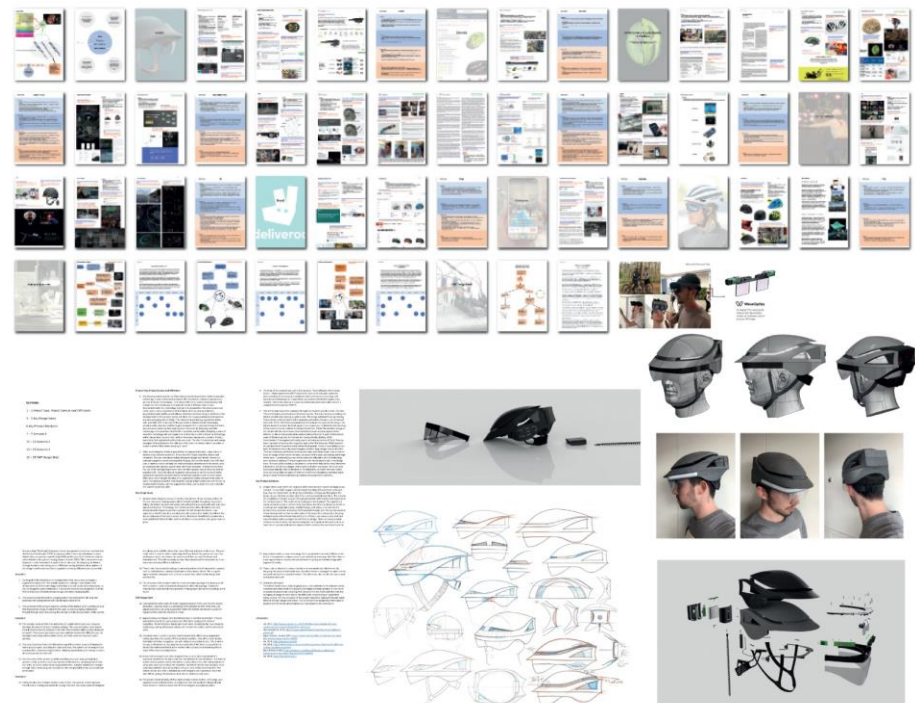
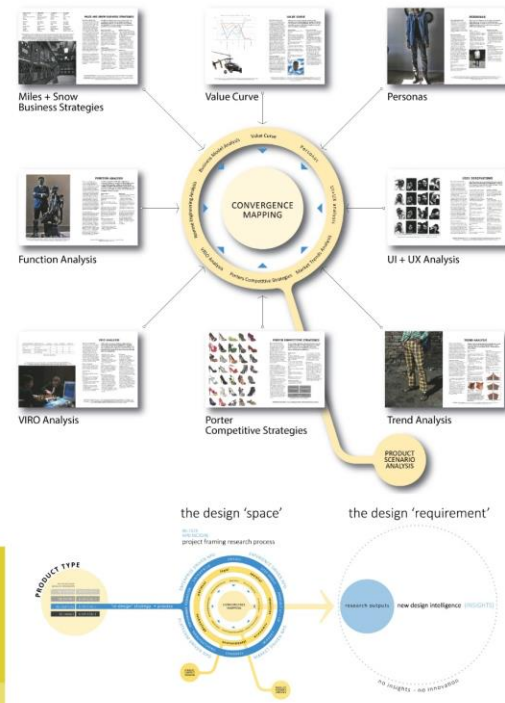
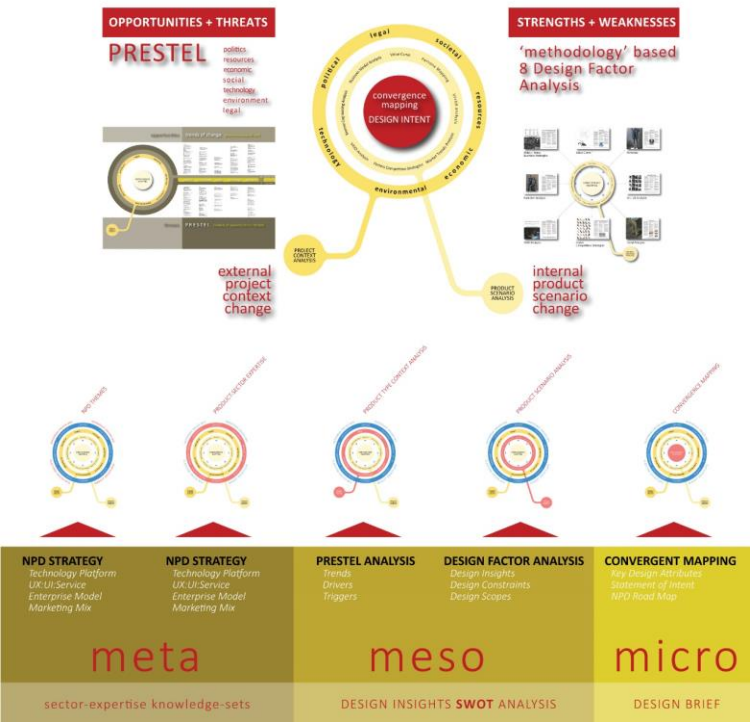
the design 'space'

the design 'requirement'



research outputs new design intelligence (INSIGHTS)

no insights - no innovation



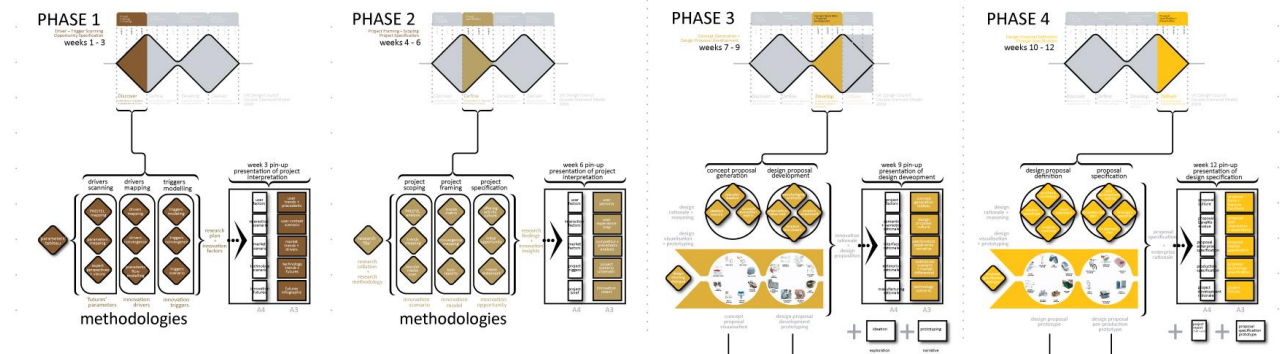
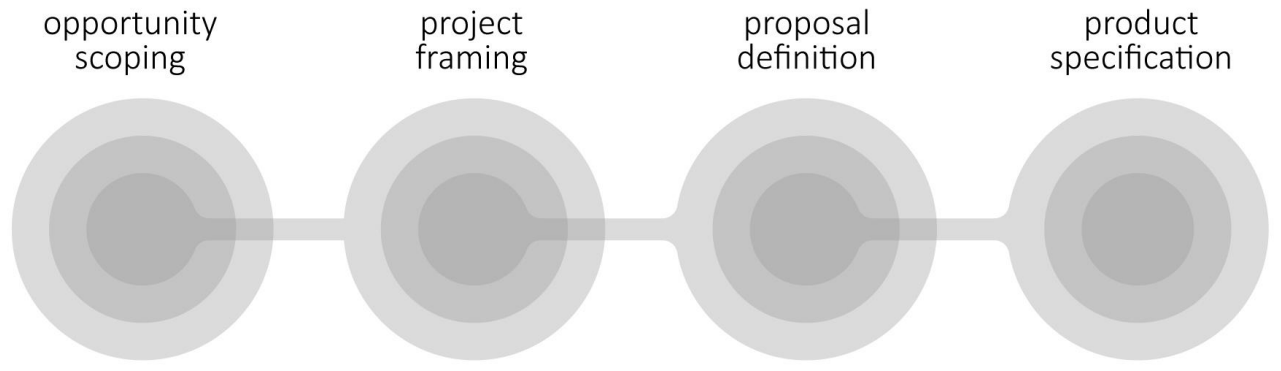
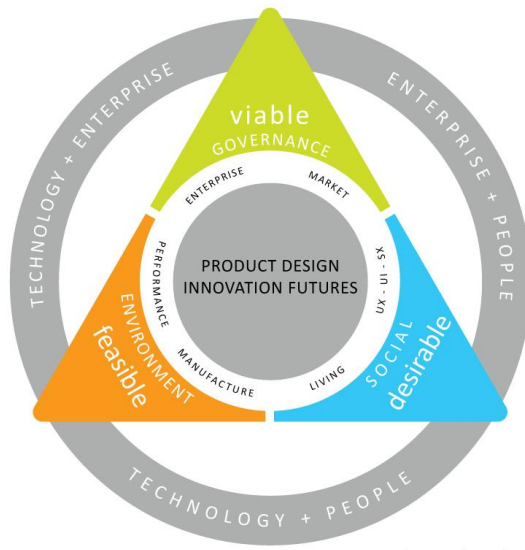
FMP 2020 Jack Beken Guided Courier



**LONDON
DESIGN
AWARDS
2020**
 DRIVENxDESIGN

SILVER

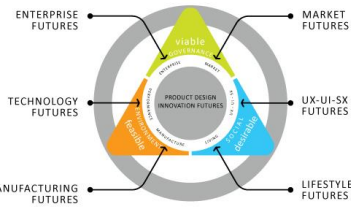
ESG convergent process



social economy
open innovation
ESG investment model

AI - ambient - situated
connected-spaces
quantified self

responsive production
no-tool manufacturing
lean-green-resourcing



co-brand-cultures
micro-niche sectors
1:1 customisation

customisable UI
connected-spaces
SMART cities

urbanisation
ageing societies
pluralistic collaging

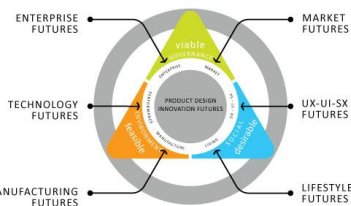
NEW-DESIGN- VALUE DRIVERS

DESIGN THINKING 'MODELLING-TOOLS'

Business Model Innovation BMI
Product Inventory Management PIM
Sustainable Investment Model ESG

Design for Product Performance DPP
Design for Sustainability DFS
Life Cycle Analysis LCA
Finite Element Analysis FEA
Computational Fluid Dynamics CFD

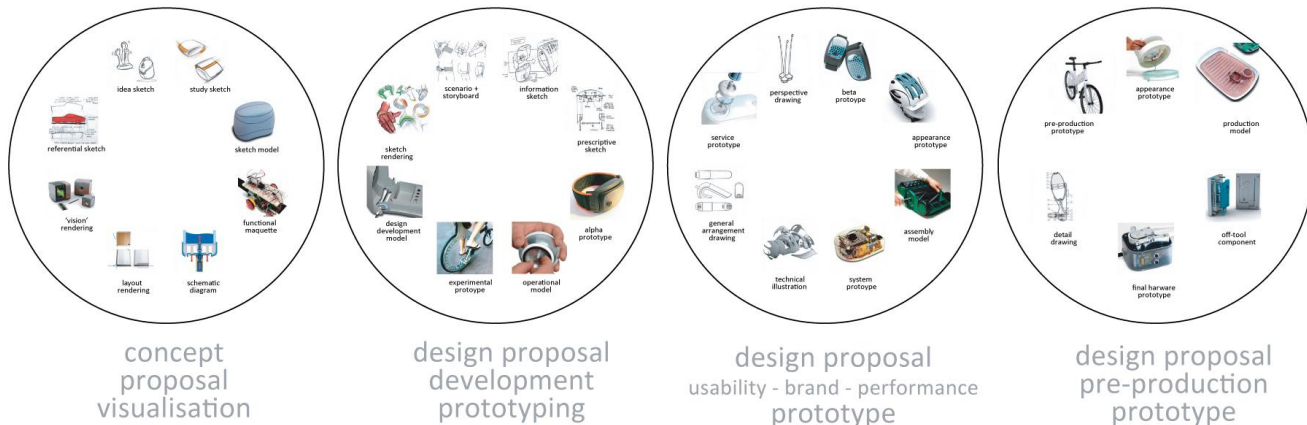
Design for Assembly DFA
Design for Dis-Assembly DFDA
Design for Manufacture DFM
Design for Dispersed Manufacture DFDM



MD Market Differential
MTA Market Trends Analysis
MP Market Positioning
Blue Ocean
Purple Ocean
Red Ocean
CB Co-Branding
BI Brand Innovation

ID Interaction Design
DU Design for Usability
UX User Experience Design
UI User Interface Design
SDI Service Design Innovation

ED Emotional Design
DS Design Semantics
HCD Human Centred Design
DFE Design for Ergonomics
UD Universal Design
CD Co-Design



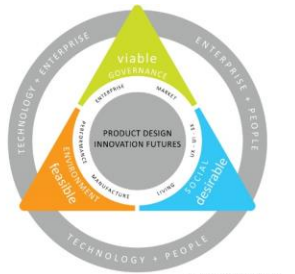
concept proposal visualisation

design proposal development prototyping

design proposal usability - brand - performance prototype

design proposal pre-production prototype

ESG convergent process

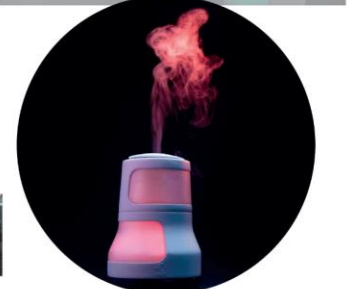
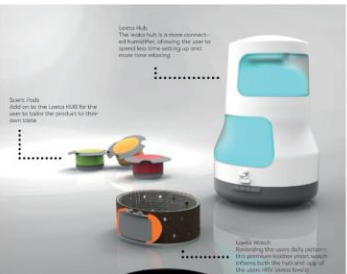
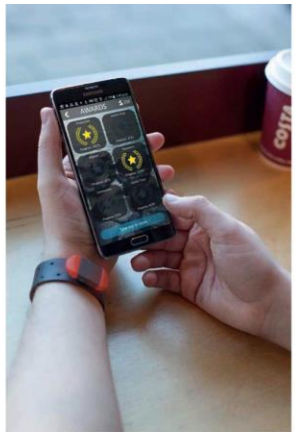
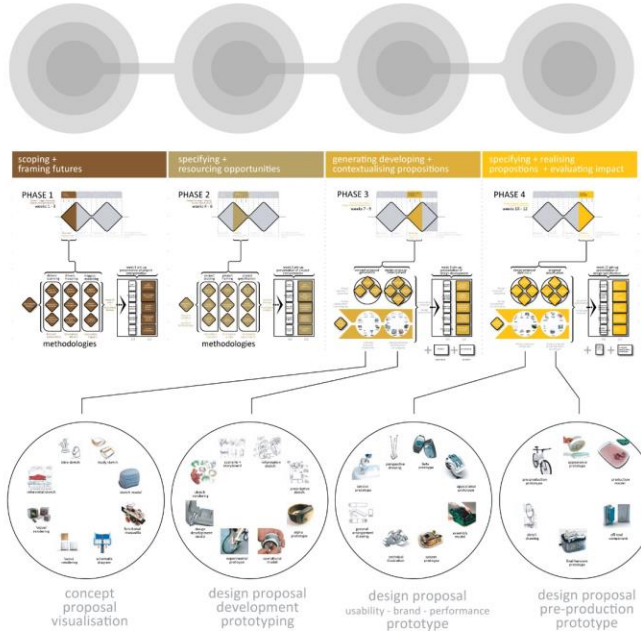


NEW-DESIGN- VALUE DRIVERS

DESIGN THINKING "MODELLING-TOOLS"



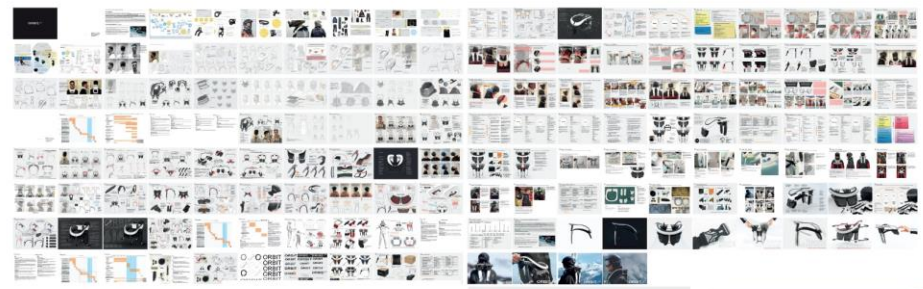
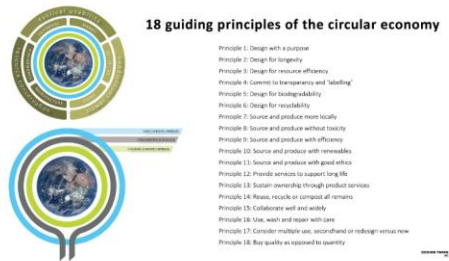
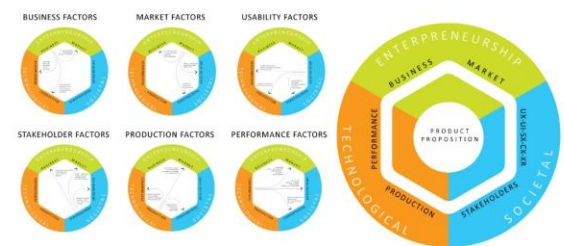
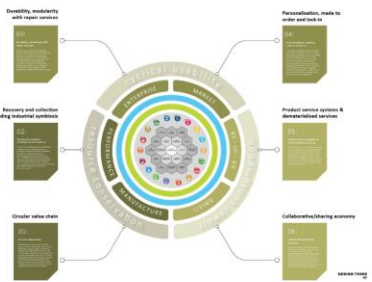
opportunity scoping project framing proposal definition product specification



ESG Double Diamond

RSA 2017 Emily Hancock Sentient Diffuser

six key strategies for design driven sustainability



Internship FMP 2018 Eric Doyle Arcon Neck Brace



Fourth Industrial Revolution (Industry 4.0)



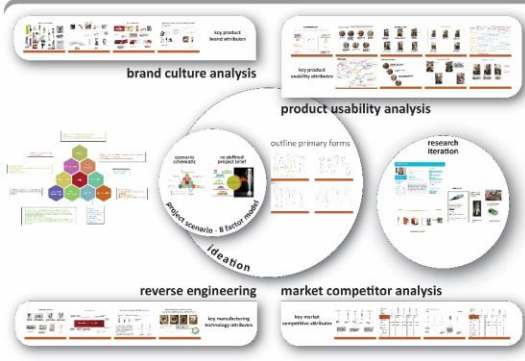
OPPORTUNITY SCOPING | **PROJECT FRAMING** | **PROPOSAL DEFINITION** | **PRODUCT SPECIFICATION**

RING
The world's first ring. Rings from office phone.

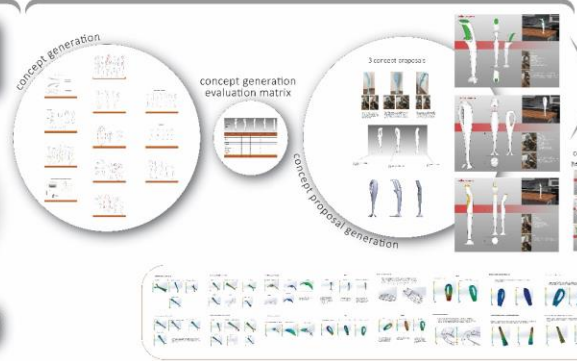
UX Dashboard
USP
Exploded View
Manufacturer Detail
5-Axis Machining

Year 2 2019 Jack Beken EE Ambient Calling

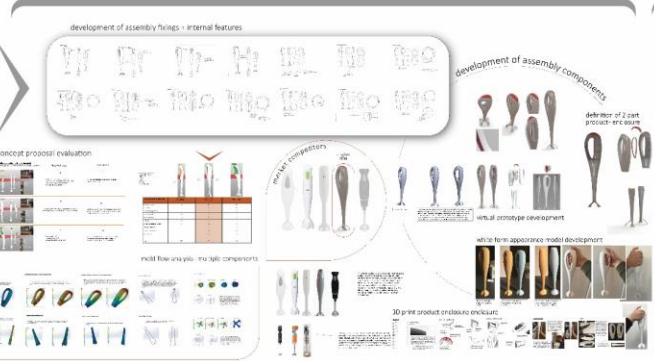
Phase 1 Project Framing & Interpretation



Phase 2 Primary Form Ideation + Development of Concept Proposals



Phase 3 Design Proposal Development



Phase 4 Development of Product Specification



Year 2 2019 Ross Kelly Wilko Long-Living Products

Design and Process

1/3 of the research was spent on user research and prototyping

400+ hours of research and prototyping

70% of the research was spent on user research and prototyping

1/4 of the research was spent on user research and prototyping

Use cases: "I use it when I'm at home", "I use it when I'm in the car", "I use it when I'm exercising"

Understanding user profiles

Personas: "I'm a busy professional", "I'm a student", "I'm a parent"

Needs: "I need a device that is easy to use", "I need a device that is portable", "I need a device that is affordable"

MEET DAVE!

Meet Dave, the AI assistant that helps you manage your asthma. Dave is a friendly, helpful, and knowledgeable assistant that can help you manage your asthma. Dave can help you with everything from checking your asthma symptoms to finding the best time to take your medication. Dave is always there for you, and he's always ready to help you get the most out of your asthma management.

User mapping scenario

Scenario: "I'm a busy professional who has asthma. I need a device that can help me manage my asthma while I'm on the go. I need a device that is easy to use, portable, and affordable. I need a device that can help me with everything from checking my asthma symptoms to finding the best time to take my medication. I need a device that is always there for me, and that is always ready to help me get the most out of my asthma management."

User mapping scenario

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AIR

A smart breathing aid for asthmatics to reduce asthma flare up and irritation to the lungs and airway when exercising.

AIR

HOW AIR WORKS

1. User gets ready to exercise. The AIR device is worn on the wrist. The device is powered on and ready to use.
2. The user starts exercising. The AIR device monitors the user's breathing and provides real-time feedback. The device also provides real-time feedback on the user's breathing and provides real-time feedback on the user's breathing.
3. The user stops exercising. The AIR device provides real-time feedback on the user's breathing and provides real-time feedback on the user's breathing.

ON/OFF button: Press to turn the device on or off. Press and hold to turn the device on or off.

LED light: Blue light indicates the device is powered on. Red light indicates the device is powered off.

Charging point: Connect the device to a USB-C port to charge.

AIR

- 01: Charging point: Polycarbonate injection moulded
- 02: Vent filter: Stainless steel - Pressed and rolled
- 03: Humidifier: Polycarbonate injection moulded
- 04: Outer casing: Polycarbonate injection moulded
- 05: Vent filter: Stainless steel - Pressed and rolled
- 06: Mouth piece: Silicone - Silicone casting

experimenting with ambiguity

the practice of *'speculative visions'*

healthier-food-miles lab:

grown resources
dematerialised products
no-margins supply

ONE BANANA



TWO BANANA



NO BANANA



NOT A BANANA

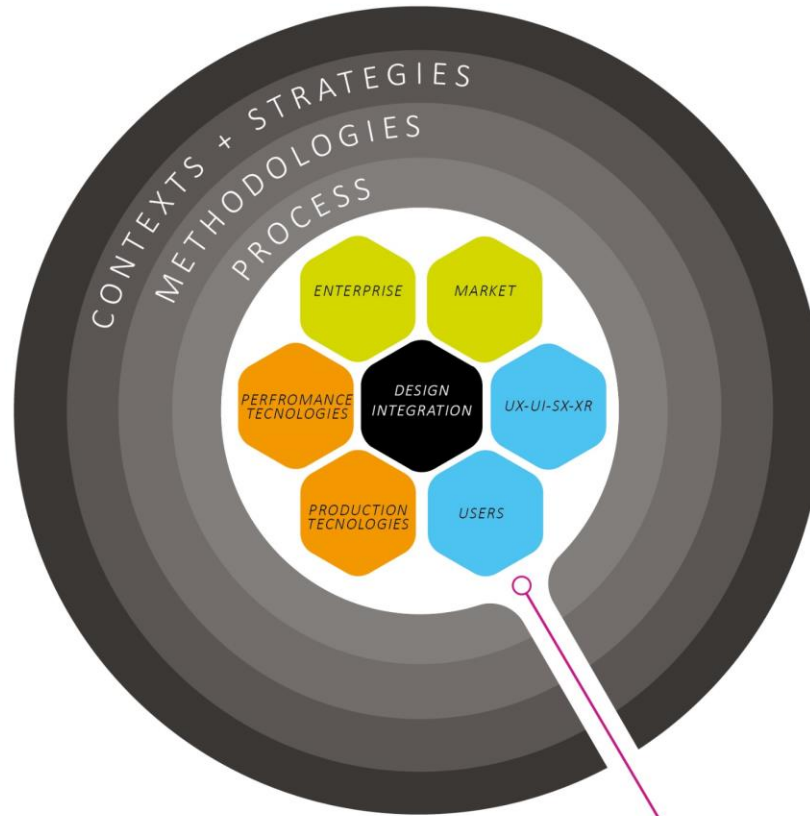
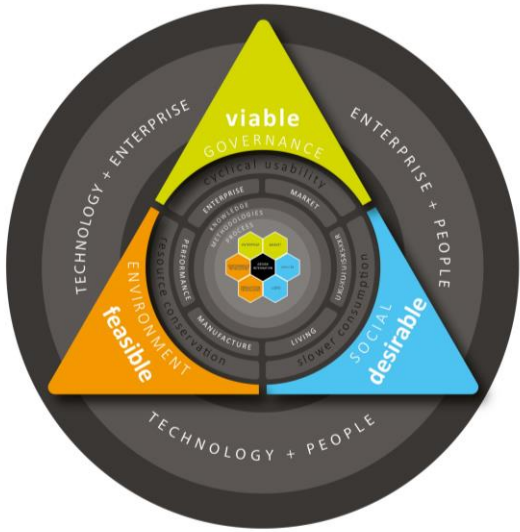


calmed technology lab:

quantified-self
sentient objects
connected moments



much more with much less



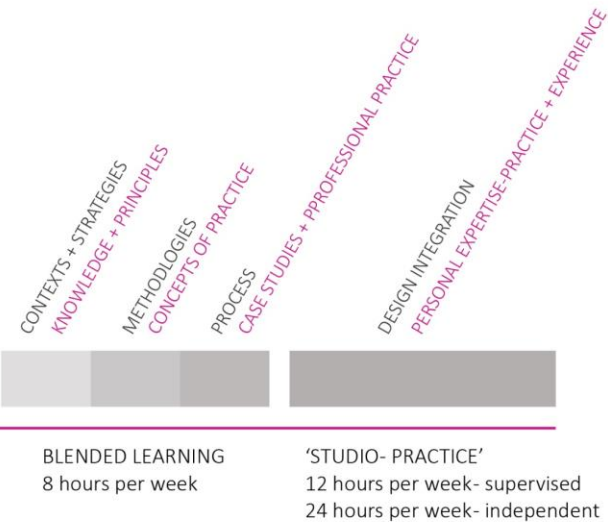
HYBRID BLENDED

Fourth Industrial Revolution (Industry 4.0)

400 hrs professional design-practice			
INDUSTRY PRACTICE 02	augmented functions	societal-corporate shift	complex systems - behaviour change
INDUSTRY PRACTICE 01	multi-user functions	relational-collaboration	behaviour adoption / socialability
data flow design	modal functions	understandability	cognition / perception / learnability
service design	behavioural functions	emotional-experiential	emotion / semantics / ethnography
interface design	feature functions	userability	skills / learnability / ergonomic
experience design	form functions	pragmatism	mechanic / semiotics / anthropometrics
interaction design	design focus	design attributes	design principles
form design			
product-design themes			

BLENDED LEARNING
Knowledge
methodologies
process
across 6 core design factors

TERM 4
TERM 4
TERM 3
TERM 3
TERM 2
TERM 2
TERM 1
TERM 1



SIX PROJECTS

issues



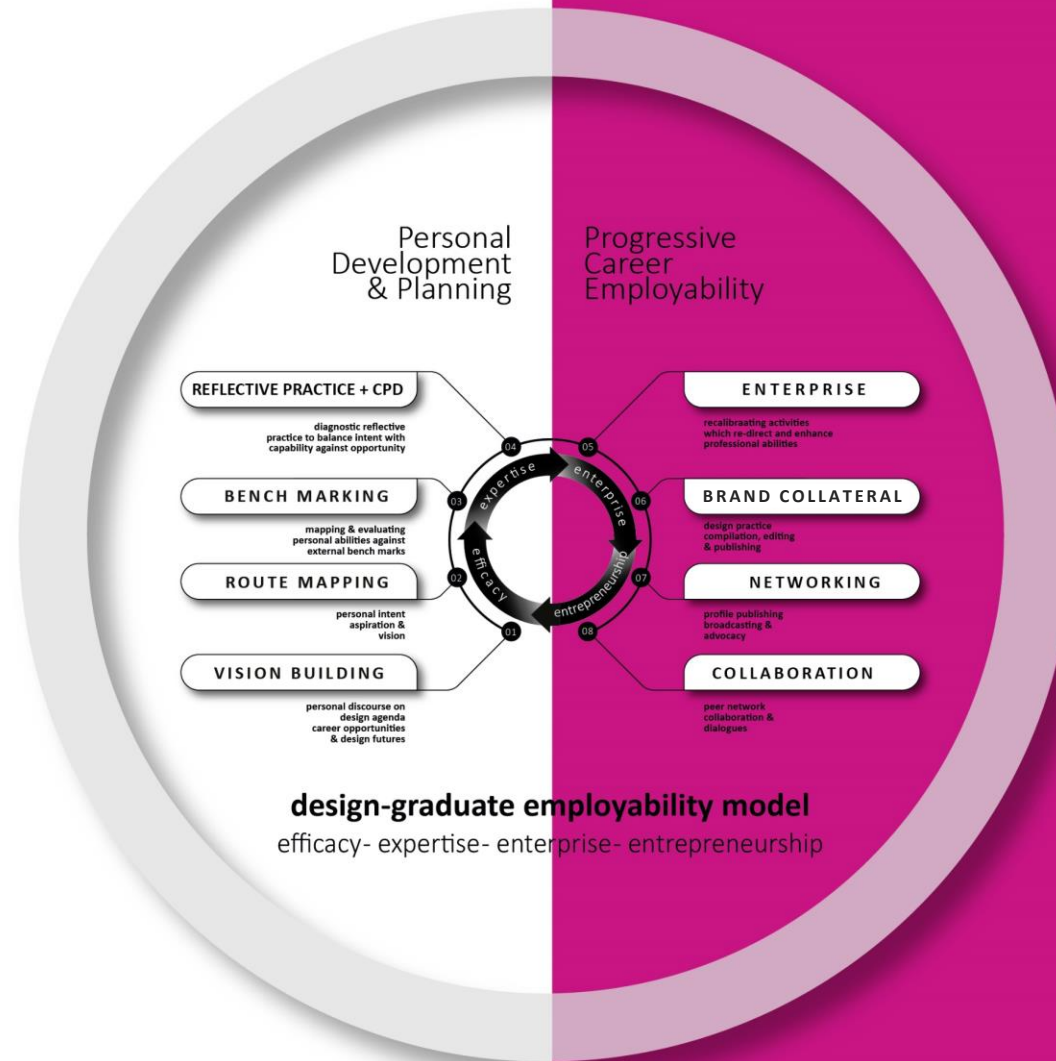
lenses



INTERNAL

SWOT

EXTERNAL



2050 efficacy agenda
ethical purposefulness
real-time PRESTEL

2050 expertise agenda
continual professional nascence
UX - UI - CX - **XR**
business/technology/people

2050 enterprise agenda
systemised collaboration
plausible + relevant 'truths'
urban metabolism

2050 entrepreneurship agenda
meaningful patterns
systemic progress