

RED PAPER 02

Transformation Design

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About RED

RED is a 'do tank' that develops innovative thinking and practice on social and economic problems through design innovation.

RED challenges accepted thinking. We design new public services, systems, and products that address social and economic problems. These problems are increasingly complex and traditional public services are ill-equipped to address them. Innovation is required to re-connect public services to people and the everyday problems that they face.

RED harnesses the creativity of users and front line workers to co-create new public services that better address these complex problems. We place the user at the centre of the design process and reduce the risk of failure by rapidly proto-typing our ideas to generate user feedback. This also enables us to transfer ideas into action quickly.

RED is a small inter-disciplinary team with a track record in design led innovation in public services. We have a network of world-leading experts who work with us on different projects.

In the last 5 years RED has run projects focusing on preventing ill-health, managing chronic illnesses, reducing energy use at home, strengthening citizenship, reducing re-offending by prisoners, and improving learning at school. We have worked with government departments and agencies, Local Authorities, frontline providers, the voluntary sector and private companies. Our work is available on-line at www.designcouncil.org.uk/red.

About the Design Council

The Design Council is the national strategic body for design in the UK. We believe that design makes everything we do, and how we do it, more inspiring, more accessible and ultimately more productive.

Our process is human-centred. Our approach is interdisciplinary. Our goal is to enable UK managers to become the best users of design in the world.

Our cycle begins with RED, the research and development team within the Design Council. Through design innovation, RED is tasked to challenge accepted thinking in business and the public sector. By exploring economic and social issues where design can make a significant difference, RED projects can form the basis for future design campaigns.

Our current campaigns are in the areas of Manufacturing, Learning Environments, Technology and Design Skills. Our campaigns bring designers and managers together with consumers to improve the performance of organisations and deliver enhanced services.

For more information on the RED team, the Design Council and our other activities, please visit our website at www.designcouncil.org.uk

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Contents

Introduction

- 1 New problems, new practice
- 2 Seeds of a new approach
- 3 Transformation design
- 4 Challenges to the traditional view of design

Notes

Introduction

In June 2005 Hilary Cottam was awarded the title 'Designer of the Year' by the Design Museum, London, for her work redesigning prisons, schools and healthcare services. The public, who had overwhelmingly voted for Cottam, knew that they had seen a good thing.

The design industry, however, was in uproar. Cottam is not a trained or traditional designer of 'things'. Instead, she has applied a design approach to some of the UK's biggest problems: prisoner re-offending rates, failing secondary schools and the rising burden of chronic healthcare. At the Design Council's RED unit, where she is Director, she forms multidisciplinary teams – with designers working alongside policy makers – who use the design process as a means of collaborating with pupils, teachers, patients, nurses, prisoners and prison officers to develop new solutions.

RED is applying design in new contexts. We use product, communication, interaction and spatial designers' core skills to transform the ways in which the public interacts with systems, services, organisations and policies.

PAPER 02

Page 6 of 33

RED is not alone in doing this type of work. A new design discipline is emerging. It builds on traditional design skills to address social and economic issues. It uses the design process as a means to enable a wide range of disciplines and stakeholders to collaborate. It develops solutions that are practical and desirable. It is an approach that places the individual at the heart of new solutions, and builds the capacity to innovate into organisations and institutions.

This new approach could be key to solving many of society's most complex problems. But the community of practice is small, and its emergence has already caused controversy. There are those who argue that it's not design because it doesn't look or feel much like design in the familiar sense of the word. Its outputs aren't always tangible, and may be adapted and altered by people as they use them. It is a long way from the paradigm of the master-designer.

Companies and public bodies are, however, increasingly faced with more complex and ambiguous issues. At the same time there is a growing desire among designers, both young and old, to tackle society's most pressing problems.

Through our work at the Design Council we are in a position to stimulate demand for new design-led approaches to complex problems, and to show that the potential market for a new design approach is clear. But is the design industry ready?

What this paper does

This paper is a call to action. It begins to set out the characteristics of this emergent discipline. It identifies a nascent but growing community of practice. It highlights an under-supply of designers equipped to work in this way. And it explores the market for, and the challenges facing, designers who are starting to work in this new discipline.

We call it transformation design.

1 New problems, new practice

More than 30 years ago, Charles Eames, the American multidisciplinary designer, was asked, 'What are the boundaries of design?'. He replied, 'What are the boundaries of problems?'.ⁱ

This point is as relevant today as it was in 1972, but the way we view problems has changed significantly since then.

Traditionally problems were seen as *complicated* challenges that could be solved through breaking them down into smaller and smaller chunks – like fixing a car.

RED believes that the most important modern problems are *complex* rather than complicated. Complex problems are messier and more ambiguous in nature; they are more connected to other problems; more likely to react in unpredictable non-linear ways; and more likely to produce unintended consequences.ⁱⁱ Tackling climate change is a good example: any solution would require many individuals and many global institutions to change behaviour on many different levels.

Traditionally, organisations have been designed for a complicated rather than a complex world. Hierarchical and silo structures are perfectly designed to break problems down into more manageable fragments. They are not, however, so effective handling high levels of complexity. For this reason, many of our most long standing institutions are now struggling to adapt to a more complex world.

James Maxmin and Shoshana Zuboff argue that this trend can be seen in both the public and private sectors, reflecting an increasing disconnect between the individual and the organisations designed to serve them.ⁱⁱⁱ Whether these are banks, post offices or hospitals, individual needs, aspirations and expectations are not being met. Maxmin and Zuboff argue that incremental innovation within old institutions will not create the required change – industries and institutions must completely reinvent themselves.

Politicians recognise this trend and are trying to find new ways to reconnect the individual consumer or citizen to the institution. Tony Blair has said that he wants public services to be 'redesigned around the needs of the user; the patients, the passenger, the victim of crime.'^{iv}

But existing approaches to organisational change have limitations which make them unsuitable for tackling the predominant issues.

Management consultants working for public sector organisations, for example, rarely think beyond their clients' organisations, or reach out into the communities of users that the public sector serves – denying the possibility of gaining any insight from the knowledge or creativity that resides with those

users. And the products of management consultancy – in the form of reports and presentations about organisational strategy – do not deliver tangible prototypes or actions.

Policy makers in Whitehall and policy thinkers in think tanks are similarly too distant from the creative power of real people with real problems. It is hard to gain insight into the real lives of users of public services by reading about them in research reports or talking about them in seminars. Moreover, the pressure to please a particular minister, deliver a vote-winning idea, or grab the day's headlines can be a distraction from the task of generating ideas that might actually work in practice.

RED believes that the design process, and the skills inherent in designing, must form a key part of a new approach to tackling our most pressing economic and social issues.

The process involved in designing the world's most successful products, services and innovations is a highly transferable one. It's a process that can be applied to almost any problem. Employing a design approach brings with it a number of crucial benefits. These include a mechanism for placing the person – the 'user' – at the heart of a solution; a means for experts to collaborate equally on complex issues; a rapid, iterative process that can adapt to changing circumstances; and a highly creative approach to problem-solving that leads to practical, everyday solutions.

However, design also goes *beyond* problem solving. Solutions to today's most intractable issues – such as the rise of chronic health conditions, the impacts of climate change, or the consequences of an ageing population – depend on the choices that people make in their everyday lives: how they eat, consume energy, or form relationships. Good design creates products, services, spaces, interactions and experiences that not only satisfy a function or solve a problem, but that are also desirable, aspirational, compelling and delightful. These are the qualities desperately needed by organisations in both the public and private sector which are seeking to transform the way in which they connect to individuals.

Evolving design practice

Design practice has never been static. Over the decades new disciplines have evolved in response to changes in the economic and social environment. Design historically grew from craft activity, with the designer as an artisan and the muse as the main source of inspiration. Modern product design has its roots in the interpretation of the Arts & Crafts movement by the Bauhaus in Germany between the wars. The post-war period onwards saw a gradual move toward a customer or market-focussed approach, and as machines became more complex, performance and differentiation became more important; ease of use began to be an influencing factor in the design of products. By the 1950s, 'human factors' pioneers like American industrial designer Henry Dreyfuss – who believed that machines adapted for ease of

use would be the most efficient – were bringing ergonomic thinking to product design.

Alternative employment ethics to that of Henry Ford's mass manufacturing methods began to emerge in the 1960s, primarily in Scandinavia and in heavy industries. A more socialist agenda, where workers engaged with management to define workplace roles and tasks, created what became known as participatory design – opening up the design process to the people who were to use its results.

In the 1970s and 80s, the software industry embraced the idea of building software to a User Requirements Definition (a document that states a problem from the user's point of view, rather than that of the system or its developer), as a way of grappling with the complexity of new IT technologies. In the 1980s the advent of the Graphical User Interface brought graphic interaction designers into the software design process for the first time. As companies employed these designers to exploit the capabilities of the new generation of graphic displays, they became exposed to the user-requirements methods being used by software designers.

PAPER 02

Page 10 of 33

This, in turn, has informed the contemporary approach to product design, which has emerged as the dominant model in the 1990s and 2000s: that of 'user-centred' design. This approach makes consideration of the needs of the user – the person who will ultimately use a product or service – primary when setting the goals and outcomes of the design process.

In the first decade of the 21st century, however, we are experiencing two important shifts: firstly, in *where* design skills are being applied, and secondly, in *who* is actually doing the designing.

A number of design groups have broadened the scope of design to include disciplines such as interaction, experience and service design. All of these demand a holistic approach, a level of systems thinking, a focus on individual behaviour, and the orchestration of a range of different design inputs.^v

Others have moved beyond the paradigm of responding to a design brief, and instead, have begun helping clients to define the problem they should be tackling. They have pioneered the rise of strategic design and innovation consulting, with design agencies being invited to consult on issues that have traditionally been the preserve of management consultants.

And beyond design groups and consultancies, the emergence of products such as mountain bikes, and sports such as kite-surfing, highlight a growing 'user revolution' - where ordinary groups of people (or 'expert users') have taken the designing of things into their own hands.^{vi}

RED believes that the design industry is once again on the cusp of a new phase – one that represents a step change in scope, approach and impact.

Designers are uniquely placed to help solve complex social and economic problems, and the beginnings of a new design discipline are emerging from groups around the world.

2 Seeds of a new approach

The following four examples are all part of a movement that is applying user-centred design principles to large scale systems and services. Despite the diversity of the complex problems they address – from health care to supply chain logistics – they share a number of similarities in outlook, ambition and process.

1 Improving life with diabetes

Angela has Type II diabetes. That means she has to remember to take her medication every day, watch what she eats and take regular exercise. It's difficult – she usually remembers the tablets but struggles with the other two. Every three months Angela has an appointment with the nurse at her local GP surgery in Bolton, who reviews her blood sugar levels and asks her a standard set of questions: whether she still smokes, for example, or if she is taking regular exercise. Despite these frequent interactions, and it being three years since she was diagnosed, Angela still hasn't managed to make the changes to her lifestyle that will prevent her condition from progressing, her health deteriorating, and the cost of her care to the NHS escalating.

PAPER 02

Page 12 of 33

Every week, 29 people in Bolton are diagnosed with Type II diabetes from a population of just 220,000. The social and economic costs of chronic disease in the UK are escalating, with diabetes alone costing the NHS £10million a year. The Bolton diabetes network is one of the best in the country – but it acknowledges that it is having limited effect in helping people like Angela make changes to their lifestyles. The answer lies with motivation, not medicine, and the problem isn't one that can be solved by more resources in the current medical system. A radically different kind of solution is needed.

The beginnings of that solution came from looking at the problem from the perspective of Angela and people like her.

The RED team first met Angela in her home in 2004. It was the beginning of a project in partnership with the Bolton Diabetes Network looking at supporting people to 'live well' with diabetes. For this project, the RED team included designers, health policy experts, social scientists, psychologists, economists and doctors.

After carrying out some rapid design research with Angela and others like her, the RED team concluded that education wasn't the problem – people mostly knew what they should be doing to manage their diabetes. What Angela struggled with was putting that knowledge into practice in her every day life: overcoming her sweet tooth, keeping the cupboards free of tempting biscuits, knowing what food to buy at the supermarket, walking to work instead of taking the bus or saying no to a drink at a party. No amount of consultation at the surgery could change this for her. Angela needed support and motivation in her daily life to overcome the practical barriers particular to her situation.

Having understood and redefined the problem from the perspective of Angela and other people with diabetes, RED got to work facilitating workshops in Bolton with a wider group of people with diabetes and their families, nurses, podiatrists, dieticians, doctors and healthcare managers, in order to develop the beginnings of a solution to Angela's predicament. The expertise they would bring to the design process proved invaluable, as did that of Angela and her fellow sufferers. Angela wasn't simply the subject of research but an active part of the RED design team. She helped develop ideas, commenting on and participating in a number of prototypes, and making real time suggestions for their improvement: what we call a 'co-design' approach.

Together they developed a simple tool – a set of 'Agenda cards' – to change the nature of the interaction in the consulting room. Each card features a phrase the team had heard people with diabetes say, such as 'It's too difficult to prepare separate meals' or 'Diabetes makes my love-life difficult'. Before going into a consultation, patients choose the cards that matter to them most, and use them during the consultation to articulate the areas in which they need support, literally laying out their agenda on the table. Before, patients often found themselves not telling the truth when asked the standard questions by the nurse. The cards provide patients with a means of putting their own 'agenda' first, rather than that of the health service.

Some of the doctors and nurses who helped develop the cards were initially sceptical, but quickly became champions of the idea when they tested the cards out with their own patients. They found that the cards cut down the amount of time spent in a consultation getting to the heart of a problem (from ten minutes to two minutes) freeing-up more time to spend on supporting the patient's needs.

The team also found that many patients picked out the card that said, 'I need someone to coach me through this'. By putting an executive life coach together with participating patients, the team was able to prototype the role of a 'diabetes coach', a non-medical professional who could provide motivational support to individuals and groups of people with diabetes. The Agenda cards are now being trialled in Bolton.

Quick prototypes like these not only helped the team and the Bolton Diabetes Network see ways of reconfiguring an existing service around the user, but also gave them insight into how a very different health service might work: one where people and professionals collaborate to co-create new types of healthcare.

RED focuses on using design as a process to bring about practical solutions to familiar and intractable social and economic problems, and Angela's story is part of a larger project developing new kinds of co-created health services to ease the burden of chronic disease on the UK's National Health Service.

In parallel with work in Bolton the team employed the same process with Kent County Council to develop Activmobs, a system that supports people stay active in later life. Activmobs works by using a range of webtools to enable people to form small groups of friends, identify an activity they would like to do together – dog-walking, trampolining – and choose a personal trainer who helps make their activity beneficial for fitness. Like the work in Bolton, the concept grew from intensive user research with residents of a housing estate in Maidstone, who then prototyped and developed the service in real time with the RED team and members of Kent County Council. The system builds on very human motivations, such as socialising, peer pressure and aspirations (the idea of having one's own personal trainer, for example), and gives people simple tools that help them visualise and gain feedback on their progress. Kent County Council is now looking at developing mobs across Kent, potentially as a social enterprise.

PAPER 02

Page 14 of 33

RED's approach began with work with pupils and teachers to redesign learning environments, now a larger scale Design Council initiative, and has been applied in the contexts of criminal justice, citizenship and domestic energy consumption. It is an approach uniquely suited to tackling complex issues, helping public sector institutions transform themselves, and enabling people and front-line workers to develop solutions to unmet social needs.

2 Innovating a supply chain

Ron Volpe is a supply chain director of Kraft Foods, based in Northfield, Illinois, America's largest food manufacturer. His day used to be consumed by managerial fire fighting, 'A truck that didn't arrive on time, a mixed up shipment or pricing dispute' for example. He had little time or resources to develop long term strategies, but he needed things to change. In particular he wanted to improve Kraft's relationship with its main buyer, Safeway. Their relationship, as Tom Kelley describes in his book, *The Ten Faces of Innovation*, 'left a lot to be desired'.^{vii}

Ron believed he could turn things around if he tapped into the collective knowledge of both companies. He got together with his counterpart at Safeway to form a joint innovation project. He wanted, he said, to 'take down the walls, drop the barriers, start together with a blank sheet of paper.' He worked with design consultancy IDEO to help make this collaboration happen.

'Half the value of our process is bringing people together...who've never worked together before,' says Ilya Prokopoff.^{viii} The role the design group played at Kraft was as much about facilitating a collaborative process – helping break down silos and enabling both sides to work together for mutual benefit – as about anything that might traditionally be described as design.

The first step was to get executives from both companies together to take part in a day-long session, using experience audits, brainstorming and prototyping to explore a wide range of potential remedies and solutions. They

looked at system-wide enhancements, daring to ask ‘What would the ideal supply chain look like?’, and focused on specific product-related enhancements.

The outcome of this design-enabled collaboration wasn’t new products, but instead a new way of palletising products, and a streamlined process to get the products to stores in a way that saved money for both companies in labour and carrying costs. The results of the improved processes showed a 162 per cent year-on-year increase in sales of one featured category, and a 50 per cent reduction in time taken to get new products to retail.

IDEO have sought to overcome the common problem of lack of follow-through by leaving behind the tools of their process, so clients can do for themselves what IDEO would have done for them. For Kraft, the supply chain redesign project has led not only to increases in revenue, but ‘a new culture of innovation’ that is spreading across its supply chain organisation. Interestingly for the design group, this has led not to an end of their work with Kraft, but to a longer term engagement with clients at a more sophisticated level.

PAPER 02

Page 15 of 33

3 Improving relationships with patients

Alan K Duncan MD leads SPARC (See, Plan, Act, Refine, Communicate) at the Mayo Clinic in Rochester, Minnesota. He has devoted much of his career in healthcare to improving the patient-provider relationship. He knows that the better the quality of that relationship, the better the quality of the healthcare. In an interview for the Institute of Design Strategy Conference, he explains how he and his team, helped by IDEO, learned to use video ethnography and contextual interviews to gain empathy and insight into patients’ experiences, and identify their unmet needs.^{ix}

It is still early days at SPARC but there is one project that they have been able to take through the full process, from observation to prototype, and finally to delivering a finished product. It’s an airline-style check-in kiosk, the creation of which was prompted by the observation that long lines at the clinic reception were leading to dissatisfaction with the service. The user research indicated that people were standing in line just to say ‘Hello, I’m here, I’m ready to be served’ – something that doesn’t require a level of human interaction. ‘We took the insight,’ says Duncan, ‘and constructed a mock-up of what a self check-in kiosk might look like, collected feedback from potential users, and began to iteratively refine that prototype to ultimately build a functioning kiosk that patients can use to check-in on their own without having to stand in line.’ Randomized control trials showed a high level of acceptance of this innovation, and a marked reduction in waiting time. SPARC is now trying to drive this innovation forward through the organisation.

To any good product designer, this may not seem a radical approach, but it is very different from standard medical experimental procedures. In this way,

SPARC shows that design methodology can be complementary with medical practice.

Peter Coughlan explains the process IDEO uses to help staff take on a user-centred perspective and prototyping culture in their daily work.^x After brainstorming, ideas are sorted on the premise that ‘the patient is the arbiter of the best solution.’ The group would then list prototypes or experiments that can be used to test out the ideas. ‘For example, maybe there’s an idea around a team report. We form a small group within the core design team, and within thirty minutes, they design a preliminary team report with clipboard, paper, and marker. They take that report around to the various stakeholders and get their reaction, on the spot. Ordinarily the hospital spends a year or two in committee, create what they think is the perfect team process, and then goes out and tries it ...and fails.’

Design groups working in this area all point to an organisation’s willingness to experiment as the best test of whether their transformation work will succeed. ‘If a group is willing to try a series of small experiments - and adapt them rather than abandon them when they fail - that group will learn their way to the right solution, every time. A group that insists, for cultural or hierarchical reasons, to tinker with a solution behind the scenes until it is ‘just right’ to roll it out on a large scale will be unsuccessful, every time.’^{xi}

PAPER 02

Page 16 of 33

4 Transforming rural transport

Frances Rowe is Rural Manager with the Rural and Environment Team for regional development agency One North East. Northumbria’s rolling green scenery and sparse population means key services are widely dispersed and can be difficult to for people to get to. Isolation can be a big problem, particularly for 60 per cent of the population who are over 60. Northumberland offers a comprehensive provision of public transport – school buses, patient transport and community transport – but it’s expensive to run and there had been difficulty getting isolated people to the core services they needed.

One North East needed a way to improve the user-experience of the service while reducing the cost. Frances turned to Robin Mackie, project director of DIEC – a Service Innovation & Design enterprise created by One North East to exploit the capability of design to transform services in the region. They worked alongside service innovation company live|work to help develop a design approach to rural transport issues.

The Rural Transport project they undertook was sponsored by Northumbria County Council, and is one of a portfolio of seven pilot projects instigated by DIEC which have proven the value of taking a service innovation approach to rural transport (as well as other issues as diverse as airports, hospital care, business incubation and re-development & employment). ‘The projects have demonstrated how service innovation can bring a disparate team of stakeholders together and focus them on the one thing they have in common – the service provided to the customer’, says Robin Mackie.

‘As service designers we’re interested in how service thinking can unlock complex problems, like those surrounding transportation, by re-framing the issue from a service point of view – that is, focussing on access or mobility rather than transportation’, explains livelwork director, Ben Reason. ‘One North East could see the parallels between the problems they were facing and mobility work we had done in the past where we’ve instigated projects with Fiat and ‘Streetcar’, a car sharing service.’

Livelwork began by focussing on the specific problems of the particularly isolated area of Berwick upon Tweed, close to the Scottish borders. Insights were gained when livelwork spent time on Northumberland’s transport system – travelling, observing and talking with users, including parents, adults with learning difficulties and the elderly, as well as front line workers including drivers and carers. ‘We’ve come to realise that in our public sector work, talking with front line workers is particularly important,’ says Reason, ‘They understand the users incredibly well.’

PAPER 02

Page 17 of 33

Another exercise to gain insight saw livelwork posing as a local voluntary organisation, and advertising a workshop to get potential transport providers and users together. The fact that they had to lay on transport to get everyone to the event in the first place meant that they could experience many of the problems involved in providing transport first hand.

Livelwork say they ‘didn’t bring anything new’ to the project team. Their expertise was in helping the project team to ‘better connect the things they were already doing’.

They worked as facilitators of the design process, constructing a framework for discussions between number of agencies, including amongst others, the Transport Department of Northumberland County Council, Northumbria Care Trust, the North East Ambulance Service and community transport organisations.

‘We helped put what they were talking about into action,’ says livelwork director, Chris Downs. ‘We prototyped it by getting the different agencies to call each other up and share their transport provision’.

Despite three months’ work using a design process, ‘we realised that we’d hardly drawn anything,’ says Reason. ‘It didn’t look like a traditional design approach’. Instead, the first stage of the project ended with the creation of ‘evidence’ which helped illustrate the opportunities the team had identified. This took a range of forms, from simple visuals of a potential web interface for booking transport that would illustrate the various users and providers, through to a blueprint for a partnership organisation that could provide the potential for an improved transport platform in the North East.

‘We are now taking a design-led approach to developing the organisation,’ says Mackie. ‘We will be working with partner agencies across the North East,

and specialists within One North East to co-design the future shape of the organisation.'

It's here, in the idea that even organisations could be designed objects, that transformation design's real potential for effecting fundamental change is revealed.

A user-centred perspective

Each of the groups highlighted here use the core skills of a user-centred design approach, so it is worth briefly exploring these in more detail.

Many of today's more complex problems arise because the latent needs and aspirations of 'end users' – those individuals who will receive the benefit of a given service or system – are not being met by the current offer. This is particularly true when innovation has been driven by system or technological goals. End users are, of course, complex individuals. Their underlying needs are rarely evident or articulated at the outset, and are unlikely to be identified through traditional market research.

PAPER 02

Page 18 of 33

Similarly, a user-centred approach is very different from a 'customer-centred' one, which focuses on meeting customer expectations. In fact a user-centred approach could demand significant rethinking of an offer or service in order to place the user at heart. Here, emotional considerations are equal to practical ones, and this demands the ability to look at a problem from a perspective that may be fundamentally different from that of the business-owner or service-provider. Over the years the user-centred design community has become expert at designing from the point of view of the individual, rather than the architecture of the system. The groups highlighted here find themselves in the position of championing the interests of the end-users; often counter to the original assumptions of the institution or client organisation.

A user-centred design approach, at its most basic, involves three core skills:

Looking from the point of view of the end user. Designers use a range of qualitative design research tools to understand a particular experience from the user's perspective. Observation helps uncover some of their more latent needs and desires. Immersing themselves in context helps designers to gain empathy and allows them to observe, analyse and synthesize simultaneously. These research methods do not aim to yield any quantitative or objective research 'truth', but rather to provide inspiration and actionable insights.

Making things visible. Designers make problems and ideas visible, creating frameworks to make visual sense of complex information, and quickly sketching ideas to share work-in-progress with others. Making even intangible concepts visual creates a common platform for discussion, avoids misinterpretation and helps build a shared vision. Artefacts created can include concept sketches, representational diagrams, scenario storyboards, plans, visual frameworks and models or physical mock-ups.

Prototyping. Designers like to 'suck it and see' by building little mock-ups or prototypes before they commit resources to building the real thing. In business terms, this is a good risk management technique: commit a little and learn a lot; fail early to succeed sooner. This culture of trying things out quickly, getting feedback in-situ and then iterating the idea is a fast and low-cost way of moving a project forward. Websites can be represented with a paper prototype, products by making quick card mock-ups, and services by staging interactions with props and role-play.

These skills, while not universal, will be familiar to many design practitioners, and are used by all of the groups described in this chapter. What is interesting about these groups in particular, however, is that in tune with the complexity of problems outlined in chapter one, they have expanded this approach to include some, or all, of a set of characteristics largely unfamiliar to traditional design practice.

If we take a look at the examples in the previous chapter, patterns of context, method, team make-up and philosophy emerge. We believe that these are distinct enough to form an emergent discipline that we have called 'transformation design', and that this approach has significant market potential.^{xiii}

3 Transformation design

We believe that all transformation projects, including those described in chapter two, demonstrate all of the following six characteristics:

1 Defining and redefining the brief

Organisations are increasingly grappling with problems that are ambiguous in nature: neither the problem nor its direction or outcome is clear at the outset. Whereas designers traditionally were brought in to respond to a given brief, the groups in this community of practice work 'upstream' of the traditional brief. Their involvement begins before the design brief is formulated, working with user groups and organisations to understand the scope of the issue and define the right problem to tackle. In this way, up to half of a project's timescale may be given over to problem definition and creating the right brief to answer.

2 Collaborating between disciplines

One of transformation design's great strengths is in its ability to mediate diverse points of view and facilitate collaboration. Recognising that complex problems cannot be addressed from a single point of view, and are rarely the sole responsibility of one department, set of expertise or knowledge silo, the design process creates a neutral space in which a range of people, whose expertise may have a bearing on the problem in hand, can work together.

Because of this, in transformation design the designers are not always 'designers'. Whereas most designers will have experience of collaborating with colleagues from related disciplines such as engineering, marketing and R&D, and may seek advice from specialists during a project, transformation design is truly interdisciplinary, forming teams in which economists, policy analysts, psychologists and others all take part in the design process itself. Collaborators in transformation design, no matter what their background, are likely to be strong in their core discipline and able to connect to adjacent disciplines.

3 Employing participatory design techniques

Just as transformation design acknowledges that the expertise needed to solve complex problems does not rest solely with design professionals, it also recognises that expertise does not only reside at the top of the organisation. It resides equally with users and front-line workers. A top-down innovation strategy is no longer appropriate for solving today's complex problems. Solutions must be able to be picked up by those who will deliver them.

Groups in the emergent transformation design community have begun to employ participatory design techniques that involve users and front-line workers in the design process – capitalising on their own ideas, knowledge and expertise, and uncovering some of their latent needs and desires.

There are varying degrees of participation and co-design, but co-design workshops and techniques (such as experience prototyping and user-led design reviews) all point to more designers making the design process accessible to 'non-designers'.^{xiii}

4 Building capacity, not dependency

Transformation design acknowledges that 'design is never done'. Because organisations now operate in an environment of constant change, the challenge is not how to design a response to a current issue, but how to design a means of continually responding, adapting and innovating. Transformation design seeks to leave behind not only the shape of a new solution, but the tools, skills and organisational capacity for ongoing change. This builds on the reality that 'everybody is a designer in everyday life': that we all make dozens of informal design decisions every day, from what we choose to wear to what we pack in our bags or how we organise our houses.^{xiv} Transformation design builds on the intuition of 'expert' designers, but with some initial guidance and mentoring it can be practised by non-designers too.

PAPER 02

Page 21 of 33

5 Designing beyond traditional solutions

It is no longer possible to predict from the outset that any particular problem can be solved with a new product or market offer. With industries and institutions looking to reinvent themselves, the right solution may just as easily lie in a new process, service offering, experience, system approach, or indeed a new business altogether.

Because transformation design is about applying design skills in non-traditional territories, it results in non-traditional design outputs. Recent transformation design projects have resulted in the creation of new roles, new organisations, new systems and new policies. Transformation designers are just as likely to find themselves shaping a job description as shaping a new product.

Transformation design asks designers to shape behaviour – of people, systems and organisations – as well as form. Because of this, its practice demands a high level of 'systems thinking': an ability to consider an issue holistically rather than reductively, understand relationships as well as components, and to synthesize complex sets of information and constraints in order to frame the problem.

6 Creating fundamental change

What is noticeable about transformation design projects is that they aim high: to fundamentally transform a national system or a company's culture. In the public sector, RED is applying transformation design for socially progressive ends. In the private sector, design consultancies are using transformation

design to trigger a change in the organisational culture of its clients to one of 'human-centredness', helping to transform organisations by giving them the capability to design experience from a human perspective.^{xv}

While the opportunity to create fundamental change is one of the discipline's key strengths, it also leads to one of its most important challenges: transformation design is naturally proactive. Transformation design works by identifying need and then creating solutions to answer those needs, these are often solutions which have no obvious client.

Transformation design does not claim to be a change management process, but aspects of participating in the design process may help to move towards the desired outcome. A transformation design process can provide initial steps towards changing the culture, aligning thinking and focusing around the end user. Participation in the process gives stakeholders ownership of a vision and helps champion the chosen direction. Leaving the participants with the tools and capacity to continue to adapt and innovate means not only that organisational change will continue to happen, but also that it can happen alongside that organisation's day-to-day work.

PAPER 02

Page 22 of 33

A new discipline

We're calling transformation design a discipline because it requires designers to work in a very different way. We think it is important that it stands out as a particular approach, requiring a particular set of skills and methods, and a particular context of application.

While there are a number of design groups using some of these approaches, and even a few who use many of them, the incidence of design practitioners who are joining up all these approaches into a coherent methodology is still relatively rare.

We think transformation design is unique in the 'complex problem-solving space'. The emergence of transformation design has been informed by an evolution in design practice from a wider range of design groups than we have room to record here, but its provenance can be seen in a diverse range of work: Engine's collaboration on innovation processes with the Guardian newspaper; the NextDesign Leadership Institute's explanation of the new paradigm of design; Decathlon's internal programme facilitating the participation of a wide range of employees in a collaborative design process; and live|work's redefinition of the role of a service designer from that of communicating function, controlling form and determining the experience, to that of inspiring participation, enabling possibilities and supporting relationships.^{xvi}

Many of the characteristics that we have identified as key to transformation design are not universal across design disciplines. Working in interdisciplinary teams is hardly common practice among designers. Even less so is the philosophy of leaving behind a legacy of organisational capacity

for ongoing innovation, or the ambition to proactively transform systems and organisations.

But designers need to watch out. We have recently come across shades of transformation design practice in projects where there was ostensibly no design expertise involved. It would seem that a culture that comes naturally to most designers – experiencing things from the user's viewpoint, making things visible, managing risk through prototyping, trying things out and iterating ideas rapidly – is gradually making its way into the mainstream.

One such example is celebrity chef, Jamie Oliver's, recent initiative to transform school dinners across the country, documented in the Channel 4 television programme *Jamie's School Dinners*.^{xvii} Jamie Oliver and his team would score highly on our checklist for transformation design – taking a user-centred approach by starting in a school and finding out what kids like to eat, prototyping by trying new meals out in context, iterating the recipes when it didn't work, making the kids visualise what really goes into their chicken nuggets, helping kids to make food themselves, and handing over cooking skills to the dinner ladies.

PAPER 02

Page 23 of 33

Similarly, the Solution Centre (part of The UK Pension Service) demonstrates an approach that is developed by management consultants that instinctively makes use of some designerly techniques.

The Pension Service, part of the Department for Work and Pensions, delivers retirement related benefits of around £54billion to 12 million people a year across 200 countries. Rationalising services from over 400 outlets to 29 between 2002 and 2004, and now reducing to 12 Centres could only have happened by doing things differently.

A new process, based on work being done by PricewaterhouseCoopers, brought cross-functional teams together at a new £5.5million centre in Glasgow dedicated to facilitating innovation. Their investment was paid back through the savings generated by the first four projects, one of which was the development of a navigation tool to improve the usability of legacy green screen computer systems.

They have since gone on to trigger over 70 pieces of work including projects which have successfully generated solutions to reduce the level of bureaucracy around bereavement, and increase the take up of Pension Credit, housing and council tax benefit.

The Centre focuses on the improvement on internal processes and systems. They can even create off-line stand alone versions of the Department's systems so that teams can experiment and test new ideas in a safe environment. The focus on solutions based around the customer also means working them through with customers, agents and users.^{xviii}

With government departments and businesses adopting this kind of innovation process, there has been no better time for a transformation design approach to take the lead.

But if transformation design can't be done by designers alone, and if non-designers can be designers, where does that leave the traditional designer themselves? The next chapter outlines how designers working in this area face a number of challenges.

4 Challenges to the traditional view of design

The controversy surrounding Hilary Cottam being awarded Designer of the Year suggests that there is an emerging split in the industry between 'traditionalists' and 'transformers'.

Broadly this is in response to two main developments. Firstly the decline of British manufacturing has led to designers applying their skills beyond the manufactured object and increasingly to the service sector. Secondly, professionals in all sectors no longer have a monopoly over their practice. Just as teachers are no longer the only people who help you learn, and doctors no longer the only people who can make you well, it follows that designers are no longer the only people who design.

There are many who are discomfited by this. Mike Dempsey, the new Master of the Faculty of Royal Designers for Industry, thinks it's 'very worrying that the term designer is now so abused.' He describes the proponents of transformation design as 'organisational impresarios, or design catalysts', and entreats 'can we please have our name back?'^{xix}

PAPER 02

Page 25 of 33

But what designers are called or call themselves is surely not the issue. The design industry itself is in a state of transformation. The world has changed. Competitions such as the RSA's Design Directions, NESTA's Creative Pioneers and Metropolis Magazine's Next Generation generate a level of response – both in numbers and in quality of work – which demonstrates that a significant proportion of the new generation of designers are not satisfied with a future that restricts them simply to the styling of products. Their ability to shape ideas and form desirable solutions is desperately needed to tackle the most pressing social and commercial issues.

Design consultancies may well be winning pitches against management consultancies, but already the top management consultancies are employing techniques core to design practice: visualising, prototyping, and experiencing things from the user's viewpoint. Bruce Nussbaum issues a stark warning that factionalised debates between designers could be debilitating. 'Just when victory is near, when design is finally being accepted for what it can do, people are denying its power, whining about the nomenclature and clutching defeat from the jaws of victory.'^{xx}

As designers we either seize the opportunity to be part of some of the most exciting and important work around, or we get left behind.

Transformation design's key challenges

Transformation Design presents several challenges to the designers who want to embrace this practice, challenges which are both philosophical and practical. Many of these will make traditional designers very uncomfortable.

Philosophical challenges facing designers

- **The loss of personal creative authorship**

In transformation design, the designer is less the sole author of ideas, and more the facilitator of others' ideas. 'The new designing is by its nature collaborative, so at odds with a celebrity-led culture in which people feel the need to assert ownership. The idea of the designer as auteur is under threat.'^{xxi}

- **Shaping behaviour rather than form**

Design, has historically focussed on the 'giving of form' whether two or three dimensional. Transformation design demands a shaping of behaviour – behaviour of systems, interactive platforms and people's roles and responsibilities.

- **Transformation design is never done**

The designer is no longer defining a finished result, but is creating the conditions for, or catalysing an emergent system that will change and re-configure after they have left the scene.

- **Creativity happens in run-time, not just in design-time**

Historically, the design work cycle happened in the studio or laboratory. This was a safe zone, with enough time and distance from the market (where the work would be launched or used) to get it right. Transformation demands shorter design cycles, often conducted in-flow and in-situ of the market.

- **Diversity over quality**

The designer can no longer see themselves as the arbiter of design quality, defining what 'good design' is. Instead, what's working and worth developing further defines what's good enough. That decision, too, is made by a more diverse range of contributors. This can be unsettling to the design-trained because, as design practitioners have found, 'including un-trained designers in design work changes the outcome of the solution. Often, we are finding, these outcomes have better staying power, but are not as 'slick'.'

- **Design becomes a Pro-Am community**

This work questions the fundamentals of credentials, currently made tangible through membership of elite professional institutes and associations. What makes a designer when design work is done in a shared community of practice which includes 'amateurs' and the non-design trained?

As Kate Canales explains, one reason this is seen as threatening is 'because we are exposing the principles and skills of design for what they are: simple, empathic, teachable, and transferable. There is no rocket science involved, no secret formula. To some of us this is a thrill, to share this methodology with a world that needs it so. For others, it undermines the sanctity of Designer as Artist. It takes the romance out of it to think that anyone could think and act like a designer... but we believe anyone can.'

Practical challenges facing designers

These are personal challenges facing designers working in this field. As a discipline, transformation design also faces a number of business hurdles, which include questions about leadership and value, the development of new business models, tools and processes, and the encouragement of new skills and orientation among designers.

This small community of practice desperately needs more design leaders to step up and take on the new mantle. 'While the size and complexity of problems facing clients is expanding, the reality is that the scale of problem solving skill among designers has not kept pace,' say GK VanPatter and Elizabeth Pastor of the NextDesign Leadership Institute in New York. 'At the leading edge of the marketplace, the reality is that other professionals are moving in to fill the void as problem solving leaders. We consider the traditional model of design leadership to be a burning platform today'.^{xxii}

PAPER 02

Page 27 of 33

One of the biggest challenges practitioners are facing is about communicating the value and impact of a transformation design process. As journalist Geraldine Bedell put it, 'It's difficult to get a handle on this stuff. You can photograph a new car for a magazine; you can't photograph new traffic flows through a city. So that's one reason why there's so much suspicion.'^{xxiii} Stakeholders who have participated in transformation design projects are enthusiastic champions of the work. But in order to inspire those at a company board or ministerial level, we need to build up an appropriate shared language and evidence base.

With an emphasis on embedding skills and the capacity to innovate, the traditional consultancy model may not be the most appropriate, conflicting with the need for ongoing innovation. Teaching your clients how to do what you do may sound like a good way to put yourselves out of business, but some design groups have found that transformation enables them to connect with clients on a new level as 'design partners'.

A strong methodology is at the heart of transformation design practice, and there is a need to share and develop better tools and techniques for multidisciplinary collaboration, and the induction of non-designers into its practice.

As yet there are few designers equipped to work in this way. Design organisations, whether they are consultancies within industry, or academic research bodies, have a largely commercial orientation, with a poor understanding of public service issues or the broader government policy context. Most designers and architects deliver tactical outcomes – communications, tools, products, environments. User-centred design, while prolific, is not universal. Designers respond to problem statements, or briefs, and are only beginning to engage with the strategic process of problem definition.

We need to find ways of developing new skills and orientation on the 'supply side' of transformation design so that designers keen to work in this way are able to think systemically, apply design thinking in broader social, economic and political contexts, collaborate fruitfully with other disciplines, and champion a human-centred design approach at the highest levels.

Join us

This paper forms the basis of ongoing work at RED. We are keen to build a community around the practice of transformation design.

We believe that there is huge potential in this approach. This is a call to action to all designers and non-designers wishing to work in this way to join us in developing transformation design as a discipline.

We have highlighted a small number of examples in this text. There must be many more of which we are unaware, and many other groups who are beginning to work in this way. If you are part of this, we would like to hear from you.

Our work is open source, so we are open for you to fervently agree, violently disagree, and above all to share your views with us and to share other examples at:

www.designcouncil.org.uk/RED/transformationdesign

And finally

This paper has been informed and inspired by the work of the following individuals and organisations:

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Schoolworks

The DoTank

ⁱ Excerpt from Charles Eames' answers in Design Q&A, 1972 (5 minute colour film by Charles and Ray Eames)

ⁱⁱ J Chapman, *System Failure* (London: Demos, 2002)

ⁱⁱⁱ S Zuboff and J Maxmin, *The Support Economy*, (London: Allen Lane 2003).

^{iv} Prime Minister's speech on Public Service Reform, 16 October 2001.

^v For example, Ralph Applebaum, of Applebaum Associates, orchestrates input from historians, statisticians, writers and all manner of designers and fabricators when creating narrative experiences for museums.

^{vi} C Leadbeater, 'Design your own revolution' in *The Observer* (June 19, 2005), available at

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PAPER 02

Page 30 of 33

^{vii} T Kelley, and J Littman, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organisation*, (Currency, 2005).

^{viii} D Weber, 'Ideology' in *Health Forum Journal* (November 2005), available at http://www.healthforumjournal.com/healthforumjournal/hospitalconnect/search/article.jsp?dcrpath=AHA/NewsStory_Article/data/HFJ03Spring_Weber_Ideology&domain=HEALTHFORUMJOURNAL

^{ix} Interview with Alan K. Duncan, 'Innovation Rigor', (Institute of Design Strategy Conference, May 18-19 2005), available at http://www.id.iit.edu/events/strategyconference/2005/perspectives_duncan.html

^x Interview with Peter Coughlan, (Good Experience, Inc., September 2003), available at

<http://www.goodexperience.com/blog/archives/000023.php>

^{xi} Kate Canales, IDEO

^{xii} Pine and Gilmour's *Experience Economy* maps out the progression of economies from agrarian to industrial to service to experience to transformation. It defines the Transformation economy as one where value is extracted from individual transformations rather than from bought products, consumed services and one-off experiences. Transformations cannot be made, delivered or stage, they can only be guided:

'While commodities are fungible, goods tangible, services intangible and experiences memorable, transformations are *effectual*. All other economic offerings have no lasting consequence beyond their consumption.'

^{xiii} An experience prototype is any kind of representation, in any medium, that is designed to help us understand, explore or communicate what it feels like to engage with a product, space service or system. See M Buchenau and J Fulton Suri, *Experience Prototyping*, (San Francisco: IDEO 2000), available at [http://www.ideo.com/pdf/FultonSuri&Buchenau-Experience Prototyping\(ACM 8-00\).pdf](http://www.ideo.com/pdf/FultonSuri&Buchenau-Experience%20Prototyping(ACM%208-00).pdf)

^{xiv} R Strickland, C Burns, J Cohen, and M Back, 'don't forget your stuff', a paper on the Portable Effects exhibition available at <http://www.portablefx.com/synopsis/PFXTR1998-003.html>

^{xv} Op. cit.
<http://www.goodexperience.com/blog/archives/000023.php>

^{xvi} Chris Downs and Ben Reason, live|work, from a presentation at Doors of Perception 8, New Delhi, March 2005.

^{xvii} *Jamie's School Dinners*, programme produced by Fresh One Productions, first broadcast February 23 2005, Channel 4, available at www.channel4.com/schooldinners and www.jamieoliver.com/

^{xviii} To find out more, contact: Pensions Group Solution Centre, Business Design Directorate, No3 Atlantic Quay, GLASGOW, G2 8JH; 0141 245 6917

^{xix} G Bedell, 'Politics of the Drawing Board', in *The Observer*, (November 27, 2005), available at <http://observer.guardian.co.uk/review/story/0,6903,1651396,00.html>

^{xx} B Nussbaum, 'Innovation vs. design – the British Design Council weighs in' on *BusinessWeek Online* (November 30, 2005), available at http://www.businessweek.com/innovate/NussbaumOnDesign/archives/2005/1/1/innovation_vsde.html

^{xxi} Op. cit.
<http://observer.guardian.co.uk/review/story/0,6903,1651396,00.html>

^{xxii} See <http://www.nextd.org/01/index.html>

^{xxiii} Op. cit.
<http://observer.guardian.co.uk/review/story/0,6903,1651396,00.html>

PAPER 02

Page 32 of 33

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PAPER 02

Page 33 of 33