Design in the Australian Taxation Office

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Use of Design in the ATO

Paying tax is the same as purchasing any other product or service. We pay out money to receive goods and services as a community—just like any other payment that we voluntarily make. So why do people feel differently about paying tax? The difference is that the link between the money we pay out and the goods and services we receive is less direct than most transactions we undertake. And the price varies depending on what we can afford to pay. The goods and services that we receive include defense, policing, health care, education, roads, infrastructure, social, economic, and environmental programs, and income redistribution to those whose need is greater than others. The services are delivered at the federal, state, and local government levels but, in Australia, a large proportion of the taxes are collected at the federal level by the Australian Taxation Office (ATO). The ATO employs about 20,000 staff, collects more than ninety-five percent of the federal government's revenue; and serves ten million individual taxpayers and three million businesses.

The federal government depends on the taxation system to provide the revenue to fund economic and social systems. It wants the tax system to ensure that people pay their fair share. Most Australians agree that people should pay their fair share of taxes. An A. C. Neilson survey conducted in 2003 found that, in response to the statement "I think it is important that everybody pays their fair share of tax," ninety-seven percent of respondents agreed.[1] The government uses the tax system to impose additional costs or to provide benefits where it believes this is fair. This makes the tax system more complex to administer, but achieves the government's desire for fairness.

In recent years, the ATO has adopted a design approach to the development of the tax administration system.

1 A. C. Neilson, *Community Perceptions Survey* (unpublished, Canberra, June 2003).

ATO Journey towards Design

There are several reasons why the ATO became interested in design:

1. Using design to better reflect the government's policy intent

A major review of business tax arrangements was conducted in the late '90s. While specific pieces of law were addressed, the initial chapters of the published review suggested an improvement to the overall way in which the policy, law, and administration of Australia's business tax system was designed.[2] These recommendations were given impetus when the senior public servant involved in the review, Dr. Alan Preston, took on a senior leadership position at the ATO. Dr. Preston's particular focus during his time at the ATO was to implement the findings of the review of business taxes, especially the findings relating to improving the design process. Dr. Preston established a special department, Integrated Tax Design, to develop the approaches to implementing the recommendations.

2. Using design to turn strategy in action

During the late '90s, the ATO was looking at ways to improve the way it identified and dealt with strategic issues. Dr. Richard Hames and Marvin Oka are consultants who assisted the ATO in improving its strategic understanding. They assisted the ATO to understand its environment and how various issues might emerge in the future, and to make informed decisions on appropriate courses of action. But despite this enhanced strategic capability, the ATO still struggled with converting strategy to action. Design was recognized as the potential bridge between strategy and action.

3. Using design to make paying tax easier, cheaper, and more personalized

In July 2000, Australia introduced a new tax system that included a goods and services tax, and significant changes to the withholding of income tax payments during the year. Although the changes were successfully implemented, there was some concern in the community that taxpayers were experiencing difficulties with the new system. A major initiative, putting the client experience as the focal point for design, was adopted to improve the new tax system. This program has been underway for two years now, and several initiatives have been implemented as a result of listening to the community and designing an appropriate response.

A key idea used by the ATO to guide decision making is known as the "Compliance Model."[3] In short, it says that, in order to optimize overall compliance, individual taxpayers should be treated differently depending on their past behavior and their motivation. For example, a taxpayer with a history of paying on time should receive assistance to encourage compliance, such as a reminder if

2 Review of Business Taxation, *A Tax System Redesigned* (AGPS, Canberra, July 1999).

3 Australian Taxation Office, *The Cash Economy under the New Tax System* (Department of Communications, Information Technology, and the Arts, Canberra, 2003).

they are late in paying. Conversely, a taxpayer with a record of late filing and late payments should be the subject of escalating enforcement strategies, and receive the full force of the law if they continue to fail to comply. This principle of differentiation underpins much of the ATO's design thinking.

Defining Design

The word "design" has very broad meanings. Anyone who makes something is designing, whether or not that is an intentional process. In the ATO, the new design approach is about applying the discipline of design emerging from graphic and industrial design schools to the design of interactions with tax products and services; and to the design of the whole tax system. Professor Richard Buchanan describes design as: "The human power to conceive (invent) and plan (develop), and bring into reality all the products that serve human beings in their purpose in life."[4]

Professor Buchanan also talks about four orders of design.[5] The four orders may be summarized as:

1 Graphic design looks at visual symbols, and is aimed at communication in words and systems. The purpose is to get people to think by making a persuasive argument.

2 Industrial design produces tangible artifacts, usually mass produced, to provide a physical experience.

3 Interaction design is concerned with how human beings select and use products in daily life. While the profile of interaction design has been lifted by the rise of digital products, the concepts of interaction go back further than this and apply to all types of products. Interaction design is about people and how they interrelate with the product or service. It allows for a customized experience.

4 The fourth order of design is concerned with systems and environments. The systems that designers are concerned with at this level involve humans, not about material things. There is a recognition that people cannot experience a whole system, but rather experience their personal pathway through the system.

When the ATO is talking about design, it is focusing on the third and fourth orders of design. This means that the ATO wants to ensure that the products and services that it produces will be effective in their interaction with taxpayers. Furthermore, the ATO wants to ensure that the whole experience of a taxpayer is coherent, rather than a mixture of unrelated products and services.

4 2nd Road Thinking Systems Conference, *Beyond Cost Cutting—How Design Brings Innovation to Business,* Presentation by Professor Richard Buchanan (unpublished, Sydney, September 9–10, 2003).

5 Richard Buchanan, "Design Research and the New Learning," *Design Issues* 17: 4 (Autumn 2001): 321.

Design Conferences

Once design had been adopted as a strategy for the ATO, we then had to build that capability. The first steps were a series of design conferences. These conferences served two purposes. First, they provided an opportunity for those affected by design to hear first-hand from experts in the field. Second, the conferences provided a focal point for those building the design capability to present material to the rest of the organization.

The ATO has held three design conferences. The first was in February 2000 under the direction of Professor Richard Buchanan from Carnegie Melon University in Pittsburgh, Pennsylvania. One of the key ideas emerging from this conference was that a person cannot experience the tax system, but only a pathway through the system. This provided us with a way to work with complexity, and changed the way the ATO thinks about design, from the outside in. For example, during a typical year, an individual taxpayers may need to keep tax related receipts, get advice from an ATO call center, speak to their accountant, receive tax forms and instructions from the ATO, receive a payment summary from their employer, receive statements from financial institutions and companies with which they hold investments, prepare documentation to give to their accountant, file their tax return via their accountant, receive a notice of assessment, and finally make a payment. The totality of this experience is their pathway through the system. Designing with all these stages in mind produces a very different result than designing the individual components.

The second conference took place in December 2000 with Jim Faris as mentor. At the time, he was principal of Alben Faris Design. A key theme emerging from this conference was the value of prototyping. For many in the IT industry, a prototype is built once the user requirements and design process have been completed. Jim was advocating the use of prototypes much earlier on to help identify the user requirements. He told the story of a fishing tackle box that was purchased early on in a design assignment as a very early prototype of a computer-assisted device. The prototype then went through multiple iterations, but always kept the design process very physical.

Our third conference was headed by Darrel Rhea, principal of Cheskin Research. His key message was about the importance of user research in the design process. Without strong user research throughout the design process, we cannot design effectively. Inadequate user research will be paid for downstream with products that miss the mark with the intended audience. The challenge is to understand the intended audience well enough to produce sensible segments for design. User research runs throughout the design process. It is different from design, but integral to the process.

These conferences provided a focus for all those involved in design, whether they had arrived at that point via the review of business taxes, the strategic management work, or the new tax system. They were the point at which the journeys converged, and the conferences gave some strong intellectual input into the design thinking.

Implementing Design in the ATO

When the ATO embarked on this approach, our advisors suggested that building a design capability in a large public institution may be a ten-year exercise. With three years of development now behind us, this estimate appears to be accurate. However, it presents some risks. In a rapidly changing environment, a ten-year commitment to a change initiative is very difficult. The design approach has taken several different shapes even in the three years it has been running. With changes to the accountabilities across different government agencies, the design function has narrowed its scope from the whole tax system to the tax administration system. With a current organizational decision to work with a third party to implement major software enhancements and corresponding business processes, the design capability must again reposition itself to remain relevant in that context.

Design has maintained its success so far because of the unarguable centrality of the user to the whole approach, and the opportunity to work with the degree of complexity that user-based design provides.

There have been two intellectual challenges to building the design capability in the ATO. One is obviously obtaining enough understanding of design and applying it in the context of the tax system. That is a challenge that has kept us working with our design mentors and consultants to break new ground. The second big intellectual challenge is actually building the capability. That requires a strong understanding of change implementation and the specific character of the ATO—what will or won't work in that context.

As we have developed our approaches, we have tended to oscillate between being very general about what we mean by design to very specific. At first, we had a very general vision about what design could mean for the tax system. Then we became more specific with Dr. Preston leading the development of a detailed blueprint for the Integrated Tax Design capability. Part of this blueprint included a design process in six stages (Intent, Blueprint, Product Design, Build, Validate, and Implement). It also included an explanation of how multiple projects would run concurrently, the concept of user pathways, and product families.

These approaches were applied to a limited number of projects, but eventually there was some rejection of what was seen as a prescriptive approach. Our response was to become more general

again by selecting the core principles that were not negotiable, then providing a menu of techniques that could assist with each principle. This gave people an understanding of the core ideas, and some tools and techniques to help, without reducing design into a "tick the box" process.

More recently, the organization has been seeking more specifics again—insisting that design be embedded in some of the organizational processes and approval points.

This oscillation between general and specific is not a bad thing. It reflects the journey of change, and the need for people to come to a general agreement that something is worthwhile before they are prepared to have things described in more detail or mandated.

Design Roles

As the ATO began to expand the use of design, we established a service delivery area that could assist teams throughout the ATO with their design work.

Establishing a design capability in an organization is not simply a matter of bringing in some designers. We wanted to build a sustainable capability, but to do this we had to establish several dimensions.

Supporting the whole initiative, we needed a continuously developing knowledge base of design. This included the techniques, methods, case studies, skills, and induction programs. It also included the technical tools to store and share information about design.

We also needed a strong "practice management" area. This function ensures that we can handle requests for design services and provide the people needed to meet these requests. It includes marketing the services, prioritizing requests, and furnishing the financial and human resource management support for the whole area.

The knowledge base and practice management area are essential support areas for the more visible part of the service delivery area, in which we are directly delivering design services to projects and building design capability in the organization.

As we began to recruit people, we had to consider the types of skills that we needed to support these changes. This was difficult because we were not drawing on established skill sets. We had to identify the roles, and then recruit accordingly. The recruitment was challenging because these were not job titles that would be recognized by the reader in a job advertisement. We were looking for people with a range of backgrounds. One of the key requirements was that applicants had well-developed creativity and innovation but, at the same time, a systematic approach to their work. We defined three roles. These were:

1 Design Facilitators—These people understand the whole design process. They assist in setting up the design team, and then lead it through the discovering, inventing, and evaluating phases as the design development progresses. They need to know what skills and techniques are required and when and where to apply them. They need strong leadership skills, especially the ability to facilitate a group. They have to be comfortable with ambiguity, but also be able to see patterns emerging from the ambiguity.
2 Information Designers—They have expertise in capturing the emerging design, and communicating it to the participants. This is a critical role, a labor intensive role but, without it, the design teams would not feel they were making any progress. Within any given design process, there might be a number of different products produced by the information designer. These could range from capturing the discussion as it occurred to highly synthesized designs or discussion papers.
3 User Researchers—The user researcher needs skills across a broad spectrum of user research. User research includes contextual research to identify the strategic context for design and the key user segments. It also includes techniques for generating ideas from users, as well as techniques for evaluating design ideas to determine which ones warrant further development and production. User research must occur in parallel with the design process, identifying and applying the best techniques to engage users, and then incorporating that knowledge into the design process.

The Design Principles

As stated earlier, the design principles were developed to describe the "non-negotiables" of design. They give designers freedom to innovate within the broad framework provided by the principles. These seven principles are set out below.

1 *The problem*—designing from the inside of the organization out to the user can mean simpler computer systems or staff processes, but the taxpayer is required to make sense of the complexity. The taxpayer might receive several unrelated pieces of communication from the ATO in quick succession which then necessitates a phone call.
We are committed to taking a user-centered approach, creating products and services that are easier, cheaper, and more personalized.

2 *The problem*—We all have very different concepts of what we are talking about until something physical is produced. We may disagree with what is produced, but at least we are all talking about the same thing. Failure to produce something visible early on can significantly slow down the design process.
We are committed to making the emerging design visible early through documentation and prototypes that focus dialogue, sustain energy, and facilitate co-design.

3 *The problem*—If all people involved in design work individually, then the finished product reflects a lack of integration between people involved in the policy, the law, the IT systems, the skilling, the marketing and education, and the work and job design.
We are committed to working collaboratively in interdisciplinary teams ensuring that changes to the tax system are fully integrated.

4 *The problem*—The intent can drift over time as each discipline becomes involved. The implemented administration may not do what the government originally intended. For example, the ATO primarily is an organization that collects revenue. When the government wants the ATO to administer a payment system, we may build in such strong compliance safeguards that the actual intended beneficiaries may find it difficult to qualify.
We are committed to building a shared understanding of intent, ensuring that, when change is implemented, the user experience reflects that intent.

5 *The problem*—With no process, a lot of activity can be generated which does not yield the intended result. Conversely, a highly structured process may create work that is inappropriate for the problem being solved.
We are committed to following a disciplined yet flexible process that stays true to our design principles and achieves a higher quality in less time.

6 *The problem*—Designing individual products may miss the overall experience. When the ATO was designing a new technology based product, it did comprehensive testing with taxpayers. But when the product was released its acceptance was disappointing. Subsequent research showed that, while the new product was good, the original paper-based product still was easier to use. We had not looked at the whole user experience.

We are committed to mapping the user pathway and other layers of design upfront to create a coherent blueprint for change.

7 *The problem*—We shouldn't be complacent and settle for incremental improvements all the time. We sometimes need to look for a major improvement that may completely eliminate some of the things that irritate taxpayers.
We are committed to looking for innovative solutions that align with corporate directions, and achieve a balance between tax system integrity and user experience.

Tools and Techniques

We have developed a broad range of tools and techniques to deliver on the principles described above:

- User research—conducting research early in the design process to better understand the underlying needs of the community, and how we should best segment them for design.
- User testing—observing users interacting with products and services to see firsthand how they experience aspects of the tax system.
- Walk-throughs—developing displays of how proposed legislation might work, and taking those displays to major cities with experts on the subject matter to explain and seek feedback from those who may be affected.
- Co-design workshops—running half-day or two-day workshops with ATO staff, affected taxpayers, and other specialists to examine specific issues and develop solutions.
- User pathway models—representing the results of user research in a way that shows the pathway of a taxpayer group through the tax system. This usually is an annual pathway. Examples of pathways include youth, wage, and salary earners, investors, retirees, and micro, small, medium, and large businesses.
- Prototyping—making something early on that can be shown to people to gauge a response before making a major investment.
- Design blueprint—a document that reflects the high-level design of a project including the intent of the proposed change, the users who will be affected, the new and existing products and services the users will need to interact with; and the processes, technology, and staff changes that will occur.
- Core design teams—a small group of people chosen for their specialist knowledge and their predisposition to innovate. People who can think of all the reasons why some-

thing won't work have a role in the design process, but not at the core design team stage. The core design team is an incubator for fragile ideas, many of which may seem to be radical or unworkable at first. About five people is a good number for a core design team, and the team may form and reform along the way as different specialists are needed. However, some common thread among the members is necessary.

- Shared understanding of intent process—We have developed a process that brings together the people who were involved in the development of the initial goal with the people who will be involved in the subsequent design.
- Intent document—This is the product of the intended process. The document on its own is insufficient to ensure that there is a shared understanding of intent but, if properly developed, is a useful artifact to remind people of that shared understanding.
- Integrated Tax Design Wheel and Stacker—The Wheel is the design process for a project. The Stacker describes the way in which multiple projects run concurrently.
- Integrated Tax Design Guide—The Guide articulates the process of design in the ATO. It is not prescriptive, but rather gives some guidance and examples, and puts forward some questions that each phase of the design process should be able to answer.
- Debriefs—We encourage teams to debrief after a design assignment.
- Quality Assurance Reviews—Quality Assurance Reviews ensure that there is confidence that the process and principles have been followed with the completion of each phase of a design assignment.
- Simulation Center—We built a simulation center in Brisbane that allows us to observe interactions between taxpayers and staff, and rapidly prototype changes.

Introducing Change

Much has been written about implementing successful change. We followed the thinking of John Kotter[6] as a checklist for areas to pay particular attention to. The change initiative to introduce design into the ATO has several hallmarks of success:

- There were several converging factors that made change imperative. There were known problems with the implementation of new government policy. We were grappling with how to act faster. The taxpayer community was voicing concerns about the usability of some of our products and services.

6 J. Kotter, *The Heart of Change* (Boston, MA: Harvard Business School Press, 2002).

- Several senior people were committed to the proposed change. A senior person from Treasury had joined the ATO to champion the change, and others in the organization and outside of the ATO took up the challenge.
- A vision for what the future could be like was created, together with more detailed thinking about how it could work. People saw that there was not only a vision, but a description of what needed to be done to achieve it.
- A lot of time and effort went into the communication phases, especially with the series of design conferences. Bringing in experts in various areas of design and using the conference approach built interest and energy, while exposing the staff to some of the best minds in the field.

  Financial resources were allocated, allowing staff and consultants to be employed to work with others in the organization to effect the change.
- Considerable skilling has taken place, including the transfer of skills from consultants.
- Physical design spaces have been set up.
- Attention was given to setting up the core design teams for different assignments.
- While we have made significant progress, we realize that this is a multiyear effort and we are not there yet.

Finally, we have thought very hard about the best way to set up design areas in the ATO. Should we adopt a centralized or decentralized model? We decided to go with a centralized area connected to decentralized areas. In setting these up, we have not used a top-down approach. Rather, we have adopted a franchise-type model, setting up areas in parts of the organization where there is an interest. We began in the superannuation (retirement income) part of the organization, and then moved to the area dealing with individual taxpayers. From there we have progressively spread into most major parts of the ATO. This approach has been a very successful because areas are set up only where the business area can see the benefit. The main stipulation that we give each area is to follow the design principles. Within that, they are free to follow or invent new methodology. Many of the new ideas are coming now from the distributed areas, which are then fed to the others by networks coordinated by the central area.

This approach has deliberately borrowed from the principles of chaos and complexity theory:

- We create simple rules, such as the design principles. We are not concerned with detailed procedures, but rather that people can self- organize around the objectives we are trying to reach.

- We look for emerging attractors in the organization. We nudge these attractors by providing support to areas that have a need and show an interest in adopting design approaches.
- We avoid using mandates until we are merely putting into written procedures the way things are done already.
- We articulate the patterns after they have emerged, rather than impose them.
- We value variety and new approaches, and actively seek the emergence of new ideas. We encourage the exchange of ideas wherever they emerge from. We avoid saying: "This is the way we do it here."
- We read the organizational context, and strive to make design relevant to the strategic shifts that inevitably occur.

What's Next?

With all that in place, there still is a lot to do to embed design within the organization.

We still need significantly more capability in user research. We have some skills at testing prototypes, but upstream research to identify design challenges and establish design segments requires much more development. Our user research capability tends to be separate from the design activity rather than integral with it. The importance of this research capability is stressed by our design mentor, Darryl Rhea: "The practices of design research and the unique skill sets of design researchers are invaluable in uncovering big innovation opportunities, and for leading the efforts of [the] advanced development team."[7]

We need an improved ability to connect our strategic work with our design work. We tend to treat these separately, but they are interrelated. Our strategic research should indicate the areas in which we should be focusing our research and development efforts.

We need to streamline the way we design in interdisciplinary teams. The concept of a design lead, with teams forming and reforming as required, is something we could do more. We currently run the risk of seeing design as an end in itself rather than as a means to a practical implementation.

We need to rely less on consultants and more on building tertiary level design skills in our own staff. A few years ago, the ATO recognized only skills in accounting and law. Subsequently, information technology skills have been recognized. More recently, the ATO is seeing that other specialized skills such as finance, human resource management, marketing, corporate management, and design are necessary to run a modern organization. The ATO still needs to build up these design skills.

7 D. Rhea in B. Laurel, *Design Research—Methods and Perspectives* (Cambridge, MA: The MIT Press, 2003).

We need to get better at reflecting on how the design capability is progressing, and make adjustments as required.

We need to recognize as an organization that we are charting some new territory in the application of the theory of design to the shaping of a national social and economic system. The Australian character is quite egalitarian, and this can translate into a reluctance to claim leadership.

We must not lose sight of the product focus and the interaction with taxpayers, even when there is a strong temptation to become internally focused to upgrade major IT systems.

Finally, we need to continue to read the tax system and the tax office context to ensure that design remains relevant to the ATO's needs. The leadership of any organization will not be interested in design as an end in itself. But the leadership of an organization is interested in ensuring that its products and services are useful, usable, and desirable. The leadership of an organization also wants to ensure that its products and services come together to provide a coherent experience for their clients or customers. For the ATO, this approach means an increase in community confidence, which is an essential ingredient in optimizing compliance.