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Perhaps I should begin by giving voice to a question that many of you might have: Why is the president and CEO of the Alberta College of Art & Design delivering the keynote address at the annual general meeting of the Telus World of Science?

It's a good question— and don't worry, I take no offense. Actually, I think the very fact that some may wonder about my presence here goes some way toward answering the question.

What I mean is that we who work in art and design, and those who are engaged in scientific pursuits have questioning in common. Moreover, our commonalities don't end there. I would go so far as to say that while we tend to think of artists and designers as being different kinds of animals than scientists and scientific researchers, these are artificial distinctions. What's more, the distinctions between artists and designers as compared to doctors, lawyers, business people and plumbers are all equally false. We are all engaged in the design process.

Now, before you think this is all just hubris on the part of a man who leads an art and design institution, consider the most fundamental definition of design: Design is moving from the current state of affairs—however that is assessed—to a desired state of affairs—however that is determined.

For most people, that definition puts design in a new light. Typically, when people hear the word "design," they think of aesthetics—a magazine layout, or a piece of haute couture clothing, or a car—and that's all true. However, I think the most interesting aspect of this is what is implied in that definition of design: Design is a way of thinking and reasoning. It is a method for working through things. It is a means of getting from the current to the desired.

Naturally, this gives rise to yet another question: What is the design method? Well, it can be summed up as a series of steps, which I will just outline briefly.

1) Identifying and defining the problems,

2) Gathering and analyzing information,

3) Determining performance criteria for successful solutions,

4) Generating alternative solutions and building prototypes,

5) Evaluating and selecting appropriate solutions from the prototypes,

6) Implementing choices,

7) Evaluating outcomes.

If you listen carefully to those steps, they are also a fairly good summary of scientific methods. The tasks encompassed by what artists and designers call the creative process are the same things scientists do in the course of their work. We use different jargon and vernacular, but we are engaged in the same processes.

Keeping these two things in mind—that design is the means by which we move from a current state to a desired state, and that the distinctions between the creative process and the scientific method are artificial—we can see an infinite number of areas where design can be applied, areas of life that may have little to do with what we think of as the traditional realms of art or aesthetics.

When I assumed my duties at the college in August 2004, we did several things that reflected this realization. We requested and received from the province a change in our college mandate so that it now includes conducting research and offering graduate degrees; while we have not yet proposed a graduate degree, we will do so soon. Our college and our Board adopted a new vision in which we declare our determination to create "a laboratory environment" and our commitment to being "a place of cultural research." We also created the Institute for the Creative Process, also known as ICP@ACAD. The institute is organized around a simple notion: The creative (or design) process can be identified, articulated and applied to a wide range of issues and needs. Underlying this notion is the idea I just mentioned, that we are all involved in the design process, and that process can be applied to many sorts of issues.

Moreover, this is not just theoretical. Design is already being applied in areas that might surprise you. When the government of Australia realized it needed to reform its tax system, it turned to an American designer. Now, this guy doesn't know much about taxation — presumably he files his taxes, but that might be the extent of his previous exposure—but he does know about the process and the steps needed to move from the current state to the desired state (in other words, the design process). Therefore, he was called in to manage the discussion between the experts and to oversee the process of prototyping and finding solutions.

Design is also being successfully applied in health care. A designer I know in California worked with medical researchers at Stanford University to produce a concept map of a heart attack. Their larger goal was to find ways of improving patient care in a system that was not financially sustainable. Now, we hear that all the time—the health-care system is not sustainable—and it probably means different things to different people. In this case what it meant was that the system simply couldn't produce the quality of human interactions required by patients recovering from heart attacks to facilitate long-term recovery. Historically, these interactions are handled by nurses or nurse practitioners and consist of asking questions like, What did you eat today? Or, have you been exercising?

The first step in this project was this conceptual map of the heart attack and the subsequent recovery process. The map is quite long and lateral and starts with the heart attack itself. Then it charts, using many lines, what happens physically with the heart attack and where

you have drug interventions or surgical interventions that actually change the path of recovery.

At some point, far off to the right on the map, you reach a point where the most powerful factors in terms of the recovery and long-term health of the patient and are not medical per se, they're these human interactions that have to do with eating properly, reducing stress, exercising, and relationships, and relationships.

So, really, to go back to what I said at the outset about the importance of questions, the whole exercise of creating the map had as its goal finding the right question to be asked. Once the importance of human interactions in the recovery process was established as critical, the question became, "How can we redesign how this patient is interacting with others?"

I should add that the team speculated that patients don't necessarily have to interact with nurses or other health-care professionals to reap benefits. They might simply talk to each other, or their friends and families, and of course, they could do so at no cost to the system. Even online communities show promise for fulfilling this need for interaction.

Ultimately then, this is an example of design applied to a system. It's not about the physical environment so much as it is about how people deal with each other. And, because design is dealing with systems and behaviour, by definition it has to be multi-disciplinary and cooperative. Designers have to work with medical researchers, management experts, tax accountants and everybody else that have anything to do with the health care process.

This new level and practice of designing is what the Institute for the Creative Process at ACAD is responding to and addressing. Essentially, the institute is about articulating the seven steps of the design process I mentioned earlier in such a way that we can apply them to a range of different situations for outcomes that are more effective. Some of the questions we might tackle are: How does a community develop a sense of cohesion and common purpose? What is the optimum way to structure a learning environment? How can health issues be addressed by a direct application of the creative process? And, how can a corporation engender innovation within its ranks? Design is truly moving from the design of objects and visuals to strategy and even the design of possibility…

This question of creativity is one that I've had some experience with since coming to Calgary. I've met with CEO's who say to me, "We want more creativity in our company," by which they often mean they want people who can think loosely or in unexpected ways. What I tell them is that nobody can tell you how to hire creative people. And what's more, if creative people leave a firm, as they almost inevitably will if that firm is not stimulating, then a company is left with a bunch of people who aren't as creative (whatever that really means) as he or she would like.

What anyone wants in various settings is many people at the table who can engage in creative actions; who can come up with what I like to call "actionable ideas," ideas you can act on. Therefore, the issue is not really developing more "creativity" (which is a fairly soft concept) in a company or even in the world; the issue is creating environments (within

companies or cities or provinces or countries) in which many people can engage in creative activity much of the time. In short, environments of innovation.

Interestingly, this issue is starting to become a focus at business schools across North America. The Rotman School of Management at the University of Toronto and the Weatherhead School of Management at Case Western reserve University in Ohio are encouraging students to approach business problems from different, creative angles, and incorporating design thinking directly into their curriculum. Roger Martin, the Dean of Rotman, is often a featured speaker at design conferences.

In the Britain and the United States, a few universities are taking curriculum and research in the direction of design applied to human systems. Stanford University is just beginning work on a "D-School" or school of design; it is founded by David Kelley, an electrical engineer and one of the founders of the firm IDEO in San Francisco. Although it does traditional design work such as product design, IDEO is one of the pioneers in the whole business of applying design thought and method to systems of human interaction. In fact, about 20 per cent of its business comes from the health care field.

IDEO has worked with large health care providers in the States to examine how emergency rooms and hospitals function. It is looking at emergency rooms to try to understand why when you go to a place that is supposed to make you feel better, you actually feel a bit traumatized. I won't go into the whole process here, but it involves what the firm calls a "deep dive." In a deep dive, a team spends several days observing how people interact in an ER. The goal is to determine what could be changed to produce a better recovery rate and better health. Emergency rooms are supposed to be places of clarity, understanding, secure feelings, and healing and nurturing, however the team found that most emergency room environments were the opposite of all of those things, and they worked to redesign how the patient experience could be changed for the better. They are asking questions, like why patients feel confused and anxious in a place of healing; why do we feel better interacting with people in a spa than a hospital? Again, design at work in a non-aesthetic situation.

What IDEO discovered was both interesting and unexpected. Their client, one of those large HMOs, thought it was going to have to build new state-of-the-art hospitals. Instead, IDEO found that simple things, such as making the lobbies of emergency rooms more inviting and creating larger waiting rooms so patients don't have to sit alone half-naked in a tiny sterile room until a doctor shows up, had dramatic effects. Even something as simple as a monitor showing patients their place in line to see a doctor can reduce stress and lead to better outcomes.

IDEO also made suggestions that focused on the medical staff. The firm discovered that doctors and medical assistants were sitting too far apart and that this was impeding the flow of information. It also suggested a system of special corridors where staff could meet and talk informally about cases. All these things were cheaper than building a new hospital and, more importantly, they were effective.

Of course, as the president of ACAD I am excited by all these real-world success stories. However, I also realize that they present a tremendous challenge for the college and our efforts to have an impact on our external world. The desire to be an integral part of the city

is something ACAD shares with the Science Centre. At the college, this desire is expressed in our new vision and in the Institute for the Creative Process. The first initiative of the institute is Stirring Culture, a series of five events bringing in prominent speakers who are applying design thought in new ways in Canada and around the world.

The Stirring Culture series began in September. Last night, we had Bruce Mau, who, as you know, is a driving force in applying design thought to a variety of fields. We have been getting incredible attendance for all of these events (700 Rollins, 1200 Alsop, 800 Landry and XXX for Mau), but the truly gratifying thing about the series has been the citywide discussions each speaker has prompted. These discussions take place not just at the college but—as we have heard just anecdotally from those who in attendance—in restaurants and workplaces after each event.

We have one event left in the series—that is in a couple of weeks, on May 8. It is a panel discussion featuring artists Peter Macleod, Donna Morton and Ana Serrano. I'm looking forward to this because I think it is a fitting way to wrap up Stirring Culture. Between them, these three cover a lot of what I have talked about today, and they represent the future of this work. Peter Macleod is principal of the Planning Desk, a studio that concentrates on public systems design. Donna Morton is the founder and executive director of the Centre for Integral Economics (or CIE) in Victoria. The CIE is a non-profit organization dedicated to researching and promoting market-based solutions that are socially and environmentally sustainable. Donna deals with issues as diverse as social housing, community economic development, curbing urban sprawl and reducing the amount of toxic chemicals released into the environment. Ana Serrano is the director of the Habitat new media institute at the Canadian Film Centre in Toronto. She is involved in an array of initiatives, including developing prototypes for new interactive media.

That is just a brief sketch of what these three are up to, but I think it serves to show the range of activities that now come under the scrutiny of design and creative thought. I think it will be a fascinating evening and I urge you all to come to the Jack Singer Concert Hall on May 8th to take it in.

There are many other examples of the creative process in action in the real world, but I would like to close by asking a final question, one that is perhaps closer to the hearts of those involved with the Science Centre and its partnership with the Creative Kids Museum. That question is simply, "Why should kids be exposed to design thinking?"

If we keep in mind that basic definition of design, that it is the means by which we progress from a current state of affairs to a desired state of affairs, the answer becomes clear. By that definition, the very stuff of adult life—facing a multitude of choices and uncertainty with regard to what actions should be taken to provide the best outcome—are the challenges faced by designers every day.

When we realize this, the benefit of exposing kids to design thinking becomes obvious. There is really no other option if we want to produce creative citizens, citizens who understand the context in which their decisions are being made; citizens who, like designers, understand how to go about asking the proper questions. These are precisely the things we should be teaching children.

I feel like I have been talking a lot about questions this evening, so it only seems fitting that I close by thanking you for your attention.

I welcome any questions you might like to ask.
Thank you.