



Roger Martin:

Well, thank you. Thank you for the introduction. It is wonderful to be here again at an AIGA conference, and I thought this morning I would share with you a few thoughts on how value is being created, how competitive advantage is being created increasingly in the modern economy, what the challenges are to organizations in creating value in that fashion, and what I think design thinking can do to help out in that in a very important way. And so if we think about how value is being created in an increasingly knowledge-oriented economy, it's in how we deal with and process and advance knowledge. And it is arguable to me that everything in the world crosses the minds, the vision, of society, first as a mystery. So there are mysteries of ancient times. There's mysteries of why if I drop this, it will fall, or mysteries of how it is we can create on a two-dimensional piece of paper a three-dimensional image. Or more recent mysteries how in the coastal or beach culture of California how people wanted to eat. Or I would argue current mysteries, like how is it that we can have billions of people living on this planet in peace without destroying the planet. That's a current mystery.

And the way that we deal with these mysteries is we think about them for a while, and if we think about them for long enough, we come up with a heuristic, which is a way of thinking about that mystery that helps us understand it better. A heuristic. So why do things fall when we drop them becomes the heuristic of gravity. There's a universal force called gravity that pushes things down. Being able to represent on a two-dimensional piece of paper a three-dimensional object — the heuristic of perspective. Or if you're the McDonald's brothers in 1955, you come up with the heuristic for dealing with the mystery of how to — for the people in this emerging beach culture in California want to eat the quick service restaurant with a limited menu and the ability to get people in and out of the restaurant very quickly.

If we continue to work on understanding that world, we can sometimes turn that heuristic into an algorithm. And what is an algorithm as opposed to a heuristic being a way of understanding something that gives us a better chance of coming to the answer we want? An algorithm is a formula, an exact formula for being able to accomplish what we want. So what we eventually figured out by understanding and studying gravity and physics is that if I drop this, it will accelerate at 32 feet per second squared. And one of the nifty payoffs to that is that in the modern world — what changed about the modern world is post-1980, when we got something to the stage of an algorithm, we could code it.

So Honeywell can make your 777 fall from the sky exactly the way it wants, with autopilot without any human intervention. Or in terms of representing a three-dimensional object in two dimensions, we figured out the vanishing point in due course and now have software for doing that. And arguably, the McDonald brothers, who had a very successful heuristic that helped them understand how to feed Californians, opened five stores. They were mammothly successful five stores, attracted the attention of a milkshake maker salesman named Ray Kroc, who bought the chain of five stores and turned that heuristic into an algorithm. The 57-step process for cooking a hamburger. The sophisticated algorithms for where to locate restaurants. The sophisticated algorithms for how to staff and roster a

restaurant. And within a decade had blanketed America with McDonald's and within two decades had blanketed the world with McDonald's, for better or for worse.

So why is that important to creating value? Well, it's because as we push knowledge forward from a mystery to a heuristic to an algorithm and, when we can, to code, we reduce the cost of what we're doing. Mysteries are enormously expensive for the world. In fact, most mysteries, or many mysteries, are studied, dealt with, understood in universities, right? Because it's a long expensive process. Once we can carve that mystery into a heuristic where we start to understand it, we can do it more efficiently, but we still need very intelligent people to run the heuristics of life.

So for Procter & Gamble brand management, building brands is a heuristic. We need expensive people to do that. Software development — we need software developers to think about that. If we get it into an algorithm, it can be much more inexpensively done. The people involved don't have to be as highly trained, and, of course, if we can take it all the way to algorithm, we get all the way to code, we get a machine to do it as cheaply as possible. So any organization that can take knowledge, take mysteries, convert them to heuristics faster than their competitors, convert them to algorithms faster than competitors, can have a huge cost advantage over their competitors, and do what? They can invest in solving the next mystery, right?

Now McDonald's, if we use that example, taking a mystery of what do Californians want to eat on the beach to a heuristic quick service restaurant to an algorithm — the McDonald's method — they gained a huge advantage over everybody else. What did they do with the advantage? I would argue what they did with the advantage is rather than saying we can take all of our advantage, all of the huge economic advantage we have from doing this and invest it in solving the next mystery, it did what? It let other people solve those mysteries.

New mysteries because there are always new mysteries that come up. Mysteries like what do Americans first — and in the world — want to eat quickly that doesn't kill them, right? And that's why we have Subway around and other chains like Whole Foods serving prepared food out of their stores.

So if you don't as an organization reach back up to the mystery, then the whole exercise of taking a mystery, pushing it to heuristic, push it to algorithm, is actually, you know, is actually a dead end, and that's in part where the design thinking challenge comes. Because the question is what is it that stops companies from keeping on utilizing the advantages they've gotten from pushing knowledge forward to explore the next mystery? And I would argue it's a form of thinking that dominates most organizations, and particularly big business organizations, and it is analytical thinking.

Now this is the knowledge funnel. So if we think about this, it's a funnel of knowledge, and what stops you from doing that? It is the dominant form of thinking in organizations, which I refer to as analytical thinking. I juxtapose it to intuitive thinking, which actually doesn't help out these organizations all that much.

So what does analytical thinking do and then I'll talk about what does intuitive thinking do. So analytical thinking. The purpose of analytical thinking is to prove anything — prove a proposition through inductive or deductive logic. Deductive logic reasoning from a general rule — this is the way this works, therefore we see this. All ravens are black. This bird is not black, therefore it is not a raven. Or inductive logic. We've looked at — we've surveyed all of our customers, thousands and thousands of our customers, and they think blue is better than pink, therefore, blue must be better than pink. That is what analytical reasoning is for.

The approach to it is to exploit what current knowledge we now have. Exploit the knowledge at the current level by relying on data from the past. So we'll look at the past. We'll regress the past. We'll say here is what we were selling in our stores last year and the year before and the year before, therefore that's what we'll sell in our stores going forward. And because it's based on data and logic, the goal in analytical thinking is to suppress judgment. Not utilize judgment. It's to let the facts speak for themselves. And what it's for is refining what is. So if you have a heuristic currently, it's to refine that heuristic. If you have an algorithm currently, it's simply to refine that algorithm, and the goal of it all in the final analysis is reliability. To produce a consistent outcome.

Now this is something that organizations like is to produce a consistent outcome. Notice that is not necessarily an outcome that we really want, but a consistent outcome. And we have many reliable systems and processes in the world. Think of IQ testing. It's one of the most reliable systems in the world. Probably everybody in the audience has taken the IQ test at least once in their life, whether they know it or not back in school. You test, retest many times, you'll get the same score regardless of your age or how much education you have at the particular time. It's utterly reliable. It produces a consistent result.

What is the downside of IQ testing? Well, modern research on IQ testing has demonstrated that only 30 percent of any outcome we can predict about you has to do with your IQ. So 70 percent has nothing to do with your quote, native intelligence. So it is not very valid, but it's kind of handy because it's consistent. The same, by the way, holds for the SAT test and the GMAT test and the MCAT test — they have remarkably little relevance in predicting anything about the future that we would want to know, but they're used dominantly across the economy for some reason.

So in terms of the knowledge funnel then, if we say value is derived from pushing things through the knowledge funnel, analytical thinking doesn't do much for us. It refines within the current knowledge stage rather than pushing it forward, and this is the kind of thinking that dominates most corporations, which is why most corporation will try to be innovative — try and do new things — actually spend money on them, but actually not have them happen. And as I tell most corporations, I talk to the enemy of innovation — is two words when you put them together. If you put “prove” and “it” together, they ensure that you will not have innovation. Because it turns out you cannot prove any new idea in advance using inductive or deductive logic. So the minute you say, “Prove it,” you make sure it doesn't happen.

What's then the polar opposite kind of thinking is intuitive thinking. Its purpose is to know without at least explicitly reasoning. It's my gut feel, I just know it to be the case. The approach is to explore something new. It's casting off the shackles of the past, saying, I'm not going to be determined by regressing to the past, I'm going to think about the future. It's by suppressing analysis, right? I'm not going to use analysis for this. And it's for the invention of what might be, and its goal is validity — to produce an outcome that meets the objective. I want to produce something wonderful that hasn't been done before and I'm going to do that. And so a valid outcome is an outcome that gets you what you want, so a valid intelligence test, right, would be one that will actually predict something about you, your performance in the future. Or a valid blood test would predict accurately whether you have the disease in question or not. A reliable blood test would say if you take this blood test 100 times it will give the same answer. All right.

Now what's the problem with intuitive thinking in organizations? It's hard to get an organization to do anything on the basis of intuitive thinking because it is thinking without explicit reasoning. And most analytical thinkers in this predilection gap here — most analytical thinkers will think intuitive thinkers, right, are dangerous and worrisome and should be kept out of the organization or kept in a little cage in the corner. And most intuitive thinkers, right, think the analytical thinking folks in organizations are dull, boring, linked to the past, hamstrung by the past, and so there is this great gulf in organizations between the analytical thinkers that dominate organizations, most organizations — not all — but most organizations dominated. And the intuitive thinkers who exist outside such organizations who are brought in from time to time to try and help out.

What's the answer? I think the answer is design thinking. The form of thinking that has both reliability and validity in mind and captures aspects of analytical thinking and intuitive thinking in ways that helps organizations drive knowledge forward. So what does design thinking look like? Its purpose is to balance analytical thinking, pure inductive and deductive logic with intuition. The knowing without reasoning and bringing it into the world of reasoning through something called abductive reasoning or abductive logic. A term coined by a wonderful American pragmatist philosopher, a weird and wonderful American pragmatist philosopher, Charles Sanders Peirce, who said when we see something that we don't understand that doesn't conform to our inductive — our deductive models — or our inductive logic, we try to understand it and figure it out. And what he said is what we do is make an inference to the best explanation, or he called a logical leap of the mind. The design thinker adds abductive logic to the inductive and deductive logic of an analytical thinker. And instead of saying I don't need to use logic, I don't need to explain it, says, here's my inference, let's test this inference, let's try this inference. So their approach is a respect for both the exploration of new things and the exploitation of what is currently happening.

It is about the design of what should be, not just the design of what might be. It's the integration of the future with the past, right? Analytical thinkers who are reliability-oriented only care about the present and the past. What's happened already is legitimate for analysis, right? What's in the future is illegitimate because it hasn't happened yet and we're speculating about it, to the analytical thinker. To the design thinker, we have to understand

the past but also imagine and think about the future and combine judgment with analysis. And unlike the analytical thinker who says judgment is a bad thing, the data must speak, and where is the data from? The past, and so we can't have judgment. The intuitive thinker says, no, we can't have any analysis, it is a combination of those two. So the goal is a relatively high level of reliability, which organizations need to be able to make investments, but also with validity, a desire for what we need to do in the future. So it's a productive balance of those two. And in essence, what the design thinker is expert at is turning the future into the past in a constructive way.

So if you think about it, the analytical thinker privileges the past because they want to crunch the data that exists in the past, but if we believe Charles Sanford Peirce, no new idea in the history of the world has come about through inductive or deductive logic. No new idea in the world has ever been proven in advance with inductive and deductive logic. So if you're an analytically thinking, reliability-oriented person, which organizations are chock-a-block full of, the future is a problem. The past is all you care about. And so if some designer comes to you and says, well, you know this will be great, we'll do this and it will be absolutely fantastic, that's talking about the future, right? And the future has no legitimacy or role for the analytical thinker.

Whereas the past has nothing but limitations for the design thinker. I want to think about how things could be newer, better, different. So the most talented design thinkers figure out a way to take the future, which is a problem, right? Three months from now is a problem for the analytical thinker because it has no legitimacy because it's in the future — that's the bad news about three months from now. What's the good news about three months from now? It will be in the past, right? Which then legitimizes it. So the design thinker figures out ways of communicating with the analytical thinker to give them a chance to turn the future into the past by prototyping, by doing an experiment, so that when you get to that future point three months from now, it is now in the past and you can proceed from there.

So I think in a knowledge intensive world where advancing knowledge is the key to value creation and the key to competitive advantage to organizations, this capacity of design thinking is absolutely critical to having organizations overcome the biggest block they have, which is a dependence on analytical thinking and a fear of intuitive thinking. It's the thing in-between. Thank you very much.

[Applause]

Kurt Andersen:

Well done.

Roger Martin:

Thank you.

Kurt Andersen:

I'm interested in what you think about the current sky-is-falling moment. Especially in design-intensive businesses like publishing, newspapers, magazines, books, automobiles. The failures are manifest and as many of them are in deep, deep irredeemable trouble. As you look back at the last 10, 20 years, do you think that results from more of a failure of analytical thinking on the parts of those managers or intuitive thinking?

Roger Martin:

I think it's more analytical thinking. It's pushing — I think what we've seen is the pushing of analytical thinking in organizations so far that it's become counterproductive. So I think the story of the twentieth century in business was, to a great extent, bringing scientific thinking and scientific methods to businesses and they've been applied more and more and more, so that it's now legitimate to say, well, if you can't prove that with a regression analysis, Kurt, we're not doing it, thank you very much. And what that's done is drive out innovation, and so some of those industries are a product of analytical thinking pushed just a couple of stages past what is productive for the company.

Kurt Andersen:

So my not very analytical but strongly intuitive idea five or ten years ago that newspapers were screwed was correct, and truly the people who ran newspapers failed in that because they weren't willing to make the intuitive leap that a civilian like I was.

Roger Martin:

Right. Exactly. You were talking about the future and making arguments and speculations about what might happen that wasn't a pure extrapolation of the past, and you couldn't say I will simply extrapolate the past and prove my point, so they said you have no point.

Kurt Andersen:

They often do say that.

Roger Martin:

They say it to me, too. I don't know how to deal with that. And so that's it. I mean, if they would be willing to say, you know, there might be a completely different future than the current and recent past, they might have been more ready for it.

Kurt Andersen:

Now if business people should adapt more intuitive thinking to counterbalance their predisposition to analytically think, is the opposite true? Should more intuitive people, say designers, adopt more analytical thinking to get what they want?

Roger Martin:

Yes. In a couple of ways, yes. I think it's absolutely critical that if a designer wants to be an effective design thinker in an organization, they need to understand the language of the analytical thinker, empathize with them, and figure out how to explain their logic to a better

extent. They don't have to explain it inductively and deductively, but even Charles Sanford Peirce, my hero of abductive logic, would say you need to be able to explain your logic.

Kurt Andersen:

And do you find that people in business enterprises are more inclined as time goes on to adopt these kinds of intuitive thoughts? Would they ever embrace a Daniel Eatock idea of irony and paradox as part of their way of approaching problems?

Roger Martin:

I think it's happening. I think it's slowly but surely happening, and to me, it's a result of again the pushing of the scientific method and the science of business just a little bit too far. And I think the brightest CEOs of the brightest companies out there are now recognizing that and saying, you know, we've got to adapt in some way, and they're looking to bring more design in and designers into their organizations.

Kurt Andersen:

I'm interested in — you say they push science too far because both of your books, which are smart books, have as their titles this sort of — bring this scientific metaphor of *The Opposable Mind*. *Opposable Thumb*. *An Evolutionary Idea*. *The Responsible Virus*. So, is that because you think you need to sort of imbue your ideas with hard science or are they quasi-scientific?

Roger Martin:

You know, it's a good question. I mean, I guess I would like to believe that I live in that middle ground between the two, so, yeah, I, in my books, I attempt to be sufficiently, if you will, scientific to provide a diagnosis of what we're facing. But then, also, if you will speculate on what could make that world better, and I don't prove my points as deductively or inductively as scientists would love, but I'm not ignoring science either.

Kurt Andersen:

Now there are — I mean are there — when people ask you for good examples of big successful businesses that embody this kind of integrated design thinking, what do you give them? I mean, one thinks of Apple, one thinks of Google.

Roger Martin:

Yep. I think Google and Apple, and they both have philosophies, I mean, about combining the two. Procter & Gamble is a great example. A. G. Lafley and Claudia Kotchka, I think, have led a transformation of that company. Cirque du Soleil is another lovely example, I think, of a company that understands you need both analytical thinking and intuitive thinking combined in something that is kind of organized, and have built a magnificent wonderful organization. So it's doable.

Kurt Andersen:

And all those companies are in the western 60 percent of the United States. I wonder if that's a coincidence.

Roger Martin:

Well, they say that when America tilted west, all the loose change rolled in that direction. So maybe – so maybe that had something to do with it. Although, as a Canadian, I have to say Cirque du Soleil is based in Montreal, of all places.

Kurt Andersen:

Oh, that's true. I think of Cirque du Soleil as Vegas now.

Roger Martin:

Yeah, well, no. I think its epicenter is Vegas –

Kurt Andersen:

True.

Roger Martin:

Vegas and Macau, and all things in the east.

Kurt Andersen:

Roger Martin, thank you very much.

Roger Martin:

Thank you. And I want to give you the new book. This is the new book.

Kurt Andersen:

The Design of Business: Why design thinking is the next competitive advantage.

Roger Martin:

It will be out soon, and apparently you can order it on Amazon. But that's my first copy, and it's yours.

Kurt Andersen:

And we'll have the audience decide if this is a well-designed jacket, I guess.

Roger Martin:

That sounds great. Thanks a lot.

[Music]