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SUSTAINABILITY IN ADVANCED DESIGN

CYNTHIA FIGGE PARTNER AND COFOUNDER, EKOS INTERNATIONAL, WITH
TIM BROWN CEO AND PRESIDENT, IDEO

Cynthia Figge, EKOS International: Good morning. I'm Cynthia Figge, and this is Tim Brown. I'd like to thank Mark Anderson for the opportunity to talk about sustainability and design this morning.

Just a little bit of context, and then we'll talk about this area: I was with McCaw Cellular and LIN Broadcasting in 1995, leading New Services development, and left to cofound EKOS International, which is a business strategy and new venture firm. Our desire at that time was to really focus on sustainability. We were a bit ahead of the time, I think.

About a year ago, I met Tim. Tim is the CEO of IDEO, the largest product-design consultancy in the world. This firm has won numerous awards, has a reputation for tremendous creativity, and Tim led their London office for a number of years, their San Francisco office, and then became CEO in 2000.

We're going to talk a little bit about the intersection of these areas of sustainability, technology, and design. I wanted to start with sort of a definition that I coined back in '96, about really the opportunity for businesses to create new value by operating at the nexus of economic, ecological, and social realms. That this was really a sea change.

About a year ago, I heard Tim say that sustainability would be "one of the relatively small number of key platforms to drive product and service innovation in the future." I'd like to know, if that's a correct quote, how did you come to that place? What was behind that?

Tim Brown, IDEO: It was driven by a bunch of things. Partly it was driven by a sort of interest in the space. Sustainability wasn't something that got talked a lot about when I was in design school and dreaming up how to invent lots of great new products and put lots of things out into the world, but it did occur to me at some point in my career that I was training to be probably the world's greatest producer of landfill, and that was what my career was going to be about. *[Laughter]* And that made me a little bit nervous at some level. You could certainly argue that design is a point of leverage that does create a heck of a lot of landfill.

The other thing that drove an interest in this in our organization was really coming from the community of IDEO itself. When I took over the company in 2000, one of the things I did was went around the whole company – we've got offices all over the world, and we have a lot of really incredibly creative people – and asked them, "What are the things you're interested in? What are the things that we're not doing that we should be doing?" And the only thing that was

common across everybody, whether they were in Germany or Japan or on the West Coast or on the East Coast, was: Why aren't we thinking about some of these issues more? Why aren't we thinking about issues of sustainability?

That was kind of a surprise to me, that that was such a big thing. So it was clear that at least inside our own organization it was something that was beginning to be of interest.

Also, it was clear that it was not something that our clients were asking for, that it wasn't something that businesses were knocking on the door and saying, "Oh, we're really worried about this sustainability thing; how can you help?" There were lots of other things that were higher up their list, and still are higher up their priority list.

But once I started to think about it – it's always been clear that the frameworks in which innovation happens are the nuance. You get these big bursts of innovation that you didn't think about before, when you move into a new set of constraints.

Well, you can imagine sustainability as one of the ultimate sets of constraints. I mean, it's really complex. But at the same time it brings together, as you said, social issues along with highly complex, systemic issues around how things interoperate, a whole bunch of things around efficiency versus attractiveness in various ways, from a business sense or other sense. And once you get into this kind of new space, you can't help but have new ideas. For somebody that's interested in innovation, it's just interesting to be in a new space.

Figge: I'm asked a lot what the business case is, and I think there's a real issue about time frame. We see problems that are looming, and... You said you don't necessarily have people knocking at the door for this. When should companies start to think about this, and how?

Brown: I think, like everything else, there are a bunch of ways into the space. We're already seeing – there are clearly companies out there whose footprint is so big that they've got no choice but to think about it, sort of the McDonald's and Home Depots of the world. They are thinking about it – there's lots of evidence that they're thinking about it – because they've really got no choice. They have such a big impact on their own systems that if they don't start to make them sustainable they'll just run out of space to operate. So that was kind of the first, I suppose, and most obvious, entry point into businesses thinking about sustainability, versus pressure groups and NGOs and people like that.

Equally, today we're starting to see a lot of businesses coming into the space because they've got a piece of technology that makes something more sustainable, whether it's energy technology or materials technology. So there's just the normal "Hey, we've got something interesting, we think it's going to have value, let's create it, let's build it, and let's make it work," and that's beginning to build. That's a very traditional, classical form to build out a new space, is technology innovation, if you will.

And then there are others, too, which are beginning to emerge, which I think are interesting. The one that is most obvious to me right now is that as more and more companies that were traditionally product manufacturers start to shift across to the delivery of services – not because they think it's more sustainable from an ecological standpoint, although it is, but because it's all that more valuable – they get more money for it, or very often their manufacturing has been commoditized out from underneath them by others.

So we're seeing many, many more of the kind of design problems that we're tackling today as being essentially: How do we move the creation of value from one that's primarily about the manufacturing of products to one that's about creation of services, or even, in a slightly more esoteric way, the creation of experiences? Which are really services with more emotions attached to them. A simple definition, I think.

I'm not saying there are very many good solutions out there yet, but we're potentially seeing end results which are in some way more sustainable, or at least they take less material to deliver a certain amount of value.

Figge: Yes. On Day 1, I think, we talked a little bit about the emerging consumer class, and I had a statistic that that class is 1.7 billion people, with roughly half of that – maybe not quite half – living almost at the standard of the developed world. But that consumer class in China, for example – roughly 250 million people – only represented 20% of the population, and there is just tremendous pressure as people move into the consumer class.

Any thoughts, Tim, on how do we really make some huge shifts in our consumption of stuff? I think there's some science behind this that says we need to reduce by an order of magnitude our material and energy throughput.



Brown: No. *[Laughter]*
Maybe. I don't know.

Understanding the relationship, if you like, between aspiration and desire, and what you do to fulfill that, is a very complex thing, and it's different from one culture to the next. So while one might start to feel that one can understand that in cultures that one works in a lot, I don't claim to half understand it in places like China. But it turns out, interestingly enough,

from what experience we have had in China, that things that drove consumption fastest in America are even more effective there than they are here.

For instance, brand loyalty, the interest in brands, is more obvious in China than it ever was in America. And yet it was that that drove huge amounts of consumption in the '50s and '60s and beyond, here in the U.S. So at some level, I would say *that* doesn't look too hopeful. Unless we can persuade these large organizations to stop exploiting their brands, which I don't think we're going to be able to do, then it's hard to see a shift.

And there are a few little insights that are beginning to emerge with work that's going on that just may point to things in the future. One thing that's quite clear from a lot of the work we're doing here and in Japan and in Europe, with looking at how desired shift in aging populations, populations of aging boomers and above, sort of 55 and above, is that there's a very, very clear shift away from the consumption of products to the consumption of experiences.

As people get wealthier and older, they get less interested in acquiring “stuff.” And so you start to see that a lot of the most valuable companies that are serving that space today are serving it through the delivery of experiences: eco-tourism, tourism in general, high-value experiences, whatever they might be, are beginning to be the fastest-growing organizations for those kinds of demographics.

So there’s some indication that maybe that’s going to start to trickle down. Maybe that will have an impact further down, that the age range over time will start to shift us away from consumption. If it happens here, there’s no reason to suppose it won’t happen elsewhere. But I’d say it’s hard to see where the top of the hump of that is going to come, that issue of consumption. We’re still on the upward curve, I think.

Figge: Yes. I think Martin Tobias finished yesterday saying that although he had wanted to reduce his technology footprint, he had actually dramatically increased it. He later confessed in private that he resells his stuff on eBay – so actually, that’s a good thing.

What about longevity? Product shelf life is getting shorter, we’re turning these things over much more quickly... what are your thoughts on design and how it might address some of these kinds of problems?

Brown: Well, it’s certainly one of the things we’re interested in at IDEO, is why there are no heirloom products anymore. We used to. It wasn’t an issue to do with lack of wealth or lack of money, I don’t think. I mean, wealthy people used to pass down beautiful pieces of furniture or clothing or whatever, just as much as less-wealthy people did. Yet we don’t seem interested in that sort of – whatever values they are – if it’s got heritage value, if you like, or the sort of connection of a set of community emotions that are somehow instantiated inside an object or a set of objects. We don’t seem to be so interested in that.

That’s just one of the spaces that we’re interested in. Is it actually reasonable to create things that are sort of heirloom products? Maybe they’re not products in the classical sense, either. Maybe they’re heirloom *systems*.

I’m very intrigued by how we deal with the... we talk a lot about the disposability of the physical objects. But among a lot of the issues that I see right now is the disposability or indisposability of the information structures that we’re building *with* these objects. Calendar. I mean, to me that’s becoming one of the most important artifacts.

I don’t know how many years – 10 years or something? – of my life is now kind of held within this database, which is my Outlook. It’s a bit sad, really, that Outlook’s the best we can do in terms of that [*laughter*], but I start to wonder... Maybe it’s *those* kinds of things that we’re going to start passing on. And maybe it’s software structures that become the heirloom products of the future.

You can imagine, four or five generations down, how somebody might be looking at my Outlook history, as it were, so when my great-great-granddaughter is doing her project, as my daughter just did, where she had to kind of figure out where our family had come from and all that sort of thing, she’ll be looking through Outlook databases to see what people did in their time. So maybe we’re going to be more interested in the software than the hardware on that.

Figge: Right. I think one of the reasons why perhaps sustainability has been a fairly abstract term is it’s just very all-encompassing. It has a lot to do with water and materials and energy and

health. How are you approaching this as a design firm? And maybe you can tell us a little bit about how IDEO is structured, and then how are you going after solving client problems?

Brown: We definitely try breaking it up. You know, we don't have a "sustainability practice" at IDEO. We have a bunch of practices, but we don't have a sustainability practice. We have people whose primary role it is to think about it from different perspectives. We have material scientists, we have people who have just been interested in sustainability for a long time, psychologists and people like that.

We've found that it's most effective to break it up into chunks that we can understand. So we do think about wellness and health, and what are the interesting issues around sustainability as part of a broader work that we're doing in wellness and health. We do think about materials. I mean, obviously anything that we're doing in the world of product design has a material context to it, a materials and manufacturing context.

And so we've got a group of people who are always thinking about what's the material stream and the manufacturing stream that's going into something? And where does that go afterwards? And trying to make that more effective, more efficient, more sensible. There are good business reasons for doing that, never mind good ecological reasons for doing that.

[Bill Melton] was just talking about "the bomb" before – the bill of materials. Well, the reality is that the more complex that is, the more expensive it is. So if you can simplify it, if you can understand where things come from and where they go, then ultimately you make products more efficient as well as more sustainable, and you can start to make sensible choices. So we have people that worry about that.

We have folks who are working on new energy technologies and how they get deployed out. So we're just chunking the thing up, and that's turning out to be a rather more productive way of tackling the problem. And chunking it up in such a way that we can still think about what might be really interesting – big futures, big innovations, but not across such a wide system.

The word "sustainability" is just so abstract, it's impossible to kind of get your arms around it, or see it, or understand it, in order to design with it. One of the fundamental requirements to be able to design is that if you have enough insights about something that you can kind of "see" it, then you can start to manipulate it. If you can't do that, you can't design with it. I think that's one of the problems with sustainability at the highest order, is that it's too complex to see.

Figge: Yeah. I think there's some concern that we're working at the margin, and all the change that's occurring is very incremental, and what we need is a huge breakthrough and a real gestalt. What's your feeling on that? How does change occur in the product and service areas?

Brown: Change just doesn't work that way, at least not in the design world. I mean, design works from having a set of insights about context that result in some new idea, that redefines that context, then results in new insights, in new ideas. Obviously, occasionally there are disruptive technologies. Even they don't come out of nowhere, with regards to us as designers. They may *appear* to come out of nowhere – the magic that was being talked about before – but for the most part, it is an incremental process.

That doesn't mean, however, that the end goals can't be or shouldn't be about major shifts and major changes. I think we have to be careful not to get those two things confused. I fully subscribe to Bill McDonough's notions of "Let's aim for really big things, but don't expect to get

there in one leap or two leaps or three leaps.” It’s going to be many, many, many leaps. Just – if we know what we’re aiming for, then we can navigate our way towards these things.

So to some extent, it’s a top-down and bottom-up problem. You’ve got to have some goals and metrics and visions, some ideals that you think would be worth aiming for, and then you need to kind of go through these many, many, many iterations to start to get there. I think design is really good at going through those many, many, many iterations. We need help in describing what some of those goals might be.

Figge: You know, there are businesses that we’ve talked to that have said, “We respond to customer demand, and when we start to see real shifts in our customers, we’ll respond.” So there’s kind of pieces of the puzzle here. There’s legislative change, producer responsibility, that will kick in in the 2005, 2006 time frame, that says in the EU, for example, product takeback in electronics, packaging, automotive – and that’s going to ripple through. So there’s that pressure. There’s growing pressure in the consumer market.

Brown: Yes.

Figge: Certain fields, like organics; certain pockets. What’s your sense of that? Is this a chicken and egg? Do you kind of hang back if you’re a business and wait to see, or do you get out, like BMW, who’s been designing for disassembly for decades, and really figuring it out, and now has a 98% recyclable car?

Brown: I think there are a couple of interesting things that businesses are finally beginning to realize. One is that this notion of being customer-driven rather than insightful about your customers hasn’t really produced a whole lot of business value. More and more organizations that we work with are realizing that just waiting for your customers to tell you what to do means you just do the same things as everybody else, because your customers are telling your competition what to do, too. So if you want to differentiate yourself and build value, you’ve got to be innovating ahead of customers. So it’s about having insights about them, rather than being told what to do by them.

So that’s becoming, I think, a much more widely understood idea in business. And we’re seeing that certainly more and more of the companies that are coming to us are willing to follow paths of innovation.

A good sign is how many companies are stopping using focus groups as a way of having their ideas in the first place. It’s becoming a fairly debased kind of technique now. It’s quite good for validating things once you’ve got them, but they’re not very good for having ideas in the first place. So that’s one of the things that’s shifting.



The other thing that’s shifting is this sudden realization about how quickly public perception can shift and change the context of your business.

Figge: Oh, yeah.

Brown: You've only got to look at what McDonald's had to do to respond to the supersizing thing. In a matter of months, they went from that being their major platform for growth – I mean, they were busy talking about it. You look at their annual reports of a couple of years ago, and they were talking about where this growth was coming from, to completely cutting it out of their business because of this very, very rapid shift in perceptions in the public.

That is, in terms of these things that kind of hit these organizations from the side, much more dramatic than anything that legislation's going to do. I mean, legislation does have an impact, but it's *so* slow-moving. We can already predict out what the next 10 years of legislation are going to look like, because it takes that long for things to happen.

But we cannot predict when the next “supersizing” thing is going to happen, and what it's going to be, and who it's going to affect. So again, I think companies are beginning to realize they have to start to anticipate this stuff, and they also have to start to ask themselves whether they're doing things that are unsustainable, from a health perspective or otherwise.

Figge: Yes. Do you have any thoughts about how do we measure our progress as a society or at the enterprise level? Any breakthroughs there?

Brown: I don't think we've got a clear set of things at all. I mean, clearly there are metrics out there already about energy usage, about footprints...

I think the Natural Step have some pretty good metrics that they use about understanding what the footprint of a corporation is in terms of energy use; the material-cycle stuff that McDonough Braungart have produced. There are metrics out there, if you like, that we can start to use, but that needs to be simplified down to a set of things that we can all understand.

It's a bit like all the economic indexes that we have today. We sort of understand them – or at least claim we do, anyway, and we sort of use them. We need to have some simple set of metrics that we see the benefit from too. It's no good if they're so abstract and their benefit is so far out in the future that we don't understand why we should worry about them. So we have to make them real and tangible for people.

Figge: Without revealing any proprietary secrets, any exciting client work that you can talk about?

Brown: We've always found that moving into these new domains has been a bit of a guerilla activity. We've kind of decided we're going to do it, and we start doing it on our clients without them asking for it or sometimes even realizing it. We've been doing that for a little while and had some small successes, I think, and certainly had some companies that have come to us – particularly with sustainable technologies that they want to get out into the world – and we've been able to help them.

We've done some work for some interesting organizations. Nonprofit people, like ApproTEC, who have got this fabulous business model idea that they're using in Africa to distribute water pumps to help farmers irrigate – and that's been great.

Just in the last six months, we've had the first major corporation come to us and say, "Here's a system that we have; here's a product we have; we've got to replace this because it's unsustainable. How can we do that?" I can't really tell you what it is [*laughter*], but it's very interesting. It was essentially a product system built around materials that were clearly bad materials.

So for the first time, a business kind of said, "We have to redefine this business somehow; how can we do that?" Their assumption was, I think, that it's about reinventing the material, and to some degree that's what it was, but what we found was that when you backed away from that – this is what we're finding to be a kind of useful technique – is back away from these problems, and you start to understand two things. One is, who are all of the people who touch this system in some way, who interact with it?

Figge: Right.

Brown: Because it's where people touch things that you've got an opportunity to create change. And then look at all the flows that come down to create these products, and then the flows about where they go afterwards. And again, you end up with a journey. And that journey becomes a series of episodes, and it becomes, again, the places where you can create change.

We found, in this case, that by finding a couple of places that they weren't looking before, around how things got produced and then how they got installed later on, we could create a new frame for that and come up with a completely different system, as it were, for the product.

It doesn't even behave in the same way that the previous thing did. But it looks like it's going to be a lot more sustainable. It's going to use less energy, it's going to use better materials, it's going to be easier for people to install, it's going to be higher value for the end customer. So you kind of end up with a bunch of wins there.

What we generally find in our world is we do one or two of these things. We get to be able to talk about them a bit more – that encourages other people to ask the same questions – and slowly, over time, we'll build something where we might feel we're starting to make a difference.

Figge: Five years out: thoughts about where design will be, how things will be different, where we might be?

Brown: For me, the shift I'm most interested in – which is really broader than the sustainability issue itself – is that I think design is moving from being this rather mysterious, behind-the-curtain thing that's carried out by a bunch of weird art people who went through art school, like me, to be a way of thinking that actually can be applied in many different places by many different people.

One of the more interesting things that we're doing today is working in places where part of the design problem is to invest design thinking and design methodologies into organizations so that they can tackle potential issues on an ongoing basis, whether that's in healthcare or in other service industries.

The big shift I'm looking for is that design will have a lot more impact when a lot more people use it. And it's a good way of thinking, you know? It's a useful additional tool in the toolbox, as it were, to solving problems. So if we can get a few orders of magnitude more people using design, because *they're* using it, rather than having to come to the experts, as it were, then I think we'll start to see some big things happening.

Figge: Fabulous.

We've got about two to three minutes to open it up to questions. Thank you, Tim.

Gregg Makuch, Neah Power: Hi, Cynthia. Quick question: I thought it was really interesting, [Tim's] comment on gaining insights about your customers and trying to anticipate them with features and design rather than just using classic customer feedback. What's the best method – market research, if you want to call it that – to try to get those insights, and can you give an example of success on that?

Brown: We use a lot of what are generally called ethnographic and anthropological research techniques. We send people out into the world in order to understand people. We spend a lot of our lives going to work with people, going through healthcare experiences with people, going on vacation with people. It's great fun. We get to peer into people's lives all the time. We're the ultimate voyeurs, I think. But you learn lots of things that way. So we do role playing, we do shadowing, we send things to people that help them understand their own lives a little better.

One good example of that was we were working with a bank not so long ago, trying to conceive of a new set of financial services. They didn't really understand who their customers were, and they certainly didn't understand how their customers thought about money.

One of the techniques we used there, which was really fascinating, was when we were visiting with these folks, we simply asked them to draw what they meant by money. Just somehow illustrate what you mean by money. Quite quickly we saw that the way people represented their idea of money was falling into sort of four different groups, which were nothing to do with where they were demographically or socially, but literally to do with the way they thought about money.



Some people, for instance, were very careful to plan things. Some people were very operational about their money, the people who balance their checkbooks. And then there was this really interesting group of people – one of the sketches was simply this pile of money on one side, and then a bunch of things like cars and houses and stuff. And this woman said, “You know, the way I think of money is I make money, and I buy stuff, and that’s the sum total.” *[Laughter]*

These people turned out to be people who didn't know how to use financial services; they weren't being supported by financial services. They tend to be a great set of people to try and serve, and they're often not very conscious about what they spend on financial services, so that was another advantage. *[Laughter]*

That was an example where we're doing some getting out into the world, and kind of getting deep with people, which led to some insights that actually framed this organization's way of thinking about their business. This became the segment of customers that they built their service around.

Tom Standage, The Economist: What prompted Geoffrey Ballard to invent the fuel cell, or his version of it, was the observation, I think, that 4% of the vehicles in L.A. created 70% of the pollution. He said if we can get the trucks and the lorries, which are responsible, over to fuel cells, actually the cars are last – then we could make a big difference to this problem.

I wondered, from the sustainability design point of view, if there was a single category of products that you think making that whole category more sustainable, or taking a lead in that category, would make the biggest difference? I assume it's cars, but maybe it's not. What is it?

Brown: I actually think that today it would be cars, but the category I have to say I'm most worried about is Information Technology. The proliferation of stuff in the world of Information Technology – both in terms of the products themselves and the media that those products pump through themselves. I mean, we've all seen the statistics around how much paper usage has gone up since the evolution of the PC and desktop publishing. Now we're seeing it with other forms of media too.

I actually think it won't be very far down the future before we realize that actually it isn't cars anymore that we need to be worrying about; it's the world of Information Technology.

At least with cars, there's enough material wealth in those things that you can understand how you might be able to break them up afterwards and reuse it and get some value back out of it; yet we're making these Information Technology products essentially more and more disposable. And it's more and more difficult to imagine how you make use of that stuff afterwards; so actually, that's the sector I'm most worried about right now.

Figge: I would just add to that that I agree that some of the advanced design you'll see, where really it's almost completely recyclable – I think the issue is really the product usage, so it's fuel. That is a big opportunity for sustainability.

Standage: So cars are still worse, because there may be 500 million cellphones, but at least they don't create carbon dioxide.

Figge: Yes.

Thank you so much, Tim.