



IR PODCAST

IBM AND THE FUTURE OF THE HOME

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George Bailey and Kevin Reardon are two IBM experts on the consumer-electronics industry. In this IBM podcast, George and Kevin discuss how an explosion of new consumer-electronics gadgets, smart home appliances and home network technologies promise to combine together to change the way our homes work and how we interact with them. First, however, the companies that plan to sell home integration technology and services need to find the right business model for success.

NARRATOR: IBM Podcast.

FAULKNER: I'm George Faulkner.

The early years of the 21st century have witnessed an explosion of new consumer technologies that taken together could have a big impact on the home and how we interact with it.

The spread of microprocessors into household devices, the diffusion of broadband networks, and the proliferation of a new breed of electronically delivered home services are likely to change the way we live in many important ways.

With me today are two IBM authorities on the Smart Home: George Bailey and Kevin Reardon. George is the Global Managing Partner for IBM's Business Consulting Services Electronics Industry Practice. Kevin is Vice President of IBM's Engineering & Technology Services Practices. George and Kevin are also working together on a forthcoming book on the future of the consumer electronics industry -- so they've been giving this subject some hard thought and late nights recently. Welcome to you both.



REARDON: Thank you.

BAILEY: Thank you.

FAULKNER: So we've been hearing about the imminent arrival of the Smart Home for a few years now. I certainly have many devices with microprocessors, and I have broadband. But my home still seems pretty dumb to me.

BAILEY: Well, let me be pretty clear about something right off. Your home actually is incredibly smart. You have more processing power in your home than a mainframe that ran a Fortune 500 company 10 years ago.

The storage capacity of the devices in your home, the processing power, is incredible. But what's missing, what seems to be the missing ingredient, is how to pull all that together and really make a difference in how we live and how we work.

REARDON: You know, there is without question a lot of processing power in what we might even call intelligence in the home. You know, there's been two big gaps that we've struggled with, and I think if we understand those better maybe it will make it a little clearer.

One is the high-speed connection. You know, you said you have broadband; that's good. But that's just becoming something now that is ubiquitous. Not everybody has had that, and that's a big catalyst, because without that you can't perform the kind of interaction you need.

And the second thing is the devices aren't integrated together, so you have all kinds of fancy devices, microwave ovens with microprocessors and all kinds of other capabilities, but they're all standalone devices. They don't allow you to integrate, they don't allow you to take advantage of that intelligence and that smart capability.

BAILEY: Yes. I couldn't agree more, Kevin. I think a big thing that we're lacking right now is this idea of integration: devices working together to solve a problem or create something that's different and better for us in the way we live at home.

In addition to the fact that we lack integration, the reason your home seems so dumb is it's impossible to operate without a manual. You know, right now, I don't know about our listeners, but I can hardly set up a Tivo myself. I have to get my 14 year old son to get it set up and programmed.

I mean, let's face it. Ease of use is something we just have not done very well. So how do you get all this stuff to work together?

Right now, my wife and I rely on our 14 year old son to get our house to work, because we're big on gadgets but short on engineering expertise.

FAULKNER: And time.

REARDON: Well, that's it, I think it's really time. I mean, this is stuff that all of us can figure out in one way or another but nobody wants to invest in that time. For kids it's a novelty, it's kind of something that they can be proud of they've achieved or something.

But for an adult who's already struggling with trying to find enough space and time, to sit down and read manuals or figure out how to program something, you just don't want to do that.

And I think that is a very key thing. And we're going to have to change the interfaces. And if you look at devices that have come out like iPod for example and others that are successful, a big factor is that they're very easy and intuitive.

FAULKNER: Ease of use, yes.

REARDON: You can push the button, something happens, it interacts with you in a way that makes it very obvious to you what you're supposed to do next. And if you make a mistake in terms of that, it doesn't punish you by shutting itself down and throwing you into a state of chaos. It's easily recoverable from.

And I think that's a big factor. And it's something that we're going to see happen that is going to change dramatically where we were, say, five or 10 years ago when we envisioned that maybe the PC was going to be the home controller versus what we're now seeing happen.

It's going to be a much different interface. The PC was a typewriter interface. You know, it maybe a logical thing for business but not a very logical thing for the home, not a very good interface. Too many moving parts to all these things.

FAULKNER: Yes.

REARDON: So I think, George, you're right. The big thing here I think to make this really work is it's got to be simple, it's got to be usable. And that means that it's going to open a marketplace for integration services, for services in general for how to make this thing come together.

BAILEY: Another exciting thing is we do a lot of work for example with medical devices companies. And the Smart Home of the future is going to know who you are and how healthy you are.

You're going to walk through a doorway and it's going to take your pulse, it's going to understand your blood pressure, it's going to know your blood sugar level and tell you if you're at any risk of any kind of problem.

It's going to notify your doctor. You're going to get a prescription immediately. You're going to have people at the house immediately if you're having any problems. We're going to live longer, happier, healthier better lives as well as having a lot more fun along the way.

FAULKNER: This sounds like an opportunity for consumers to remove some day-to-day stress from their lives.

REARDON: Well, and that's an important point, because it's not only just what the processing power can give you, but it's a kind of a new freedom -- because what today if you think about it as our population gets older, and there's lots of us that are getting older very fast here as the baby boom generation comes around...

Today you have to think about the idea of going to some kind of assisted care area, or old folks home if you will, or whatever else. But this technology will, as George says, give you a new capability to stay in your home longer, to be able to be more independent, to be able to do things that would have monitors, have a companion like device there.

Instead of having a nurse it may be sufficient just to have this kind of technology monitoring what you're doing, taking action fast enough, and allow you to be more comfortable, to feel more like you're in the life you want to live rather than the life you have to live.

I think it does present a new opportunity for security and for other kinds of things. There's no question companies will see advantages in being able to go in and monitor what you're doing in

terms of your energy usage, and if you're not in this part of the house, shut that part off, turn it back on as you start going over.

The capabilities and possibilities of what you can do to regain time and to have a more convenient environment and to have a more enjoyable experience and have things that you really want at your fingertips I think is going to come about as part of this Smart Home initiative.

BAILEY: Hopefully this will also allow us to create a greener future, because as Kevin was saying, we just came back from Japan and there are some companies over there who are, believe it or not, working on how electronics can protect the environment.

Ken gave one example: you walk into your house, the utilities turn on, you power up. You only use utilities that you need.

And there's a number of energy management things that people are working on to reduce our dependence on polluting devices. So if we do this right, it will free up a lot of times for good things that we should do and it will stop us from doing some bad things that we now currently do.

REARDON: And it may stop us from doing things that are harming us. I think one of the interesting things about the Smart Home is who's going to pay for it. Clearly the consumer is going to buy some of these devices; we are already doing that. It's in our history of the last 50 years to buy appliances and things like that.

But if you saw the cell phone model roll out, the cell phone companies actually or the ISP gave you the cell phone to motivate you to buy the service from them. So we're going to see that same paradigm where we see companies coming in saying, we'll provide this integration for you if you'll hook up to our service.



Or you'll see companies like Sony and Samsung and other electronics companies saying we'll provide you with all these devices, and it will be all integrated, and it will work, and we'll continue to do that, and we'll help you get content.

Or it may come about from out of left field. I think there's a very big business opportunity for insurance companies to find ways of reducing the costs of home accidents, fire and theft and other kinds of things which actually may motivate them to make an investment to reduce their overall costs which looks like a better business opportunity.

FAULKNER: What's kept the smart home from going mainstream? It seems as if we've been waiting quite a while for its arrival.

BAILEY: I think there's sort of a technical answer and there's a business model answer. And I'll try and give you a business model answer based on the work that we have done with electronics companies really around the world.

The business model answer is companies today that are producing these devices are not set up to really come up with networked solutions that create better lives for people. For the most part they're engineering driven, they're silo based so hey, if I make cell phones I have no idea what people who make appliances do.

So the ability to go cross segment to create solutions, very, very limited in most companies today. As a result, there's a vacuum, and when somebody does it, like when Apple did it with iPod and said, hey, you know what? We're going to sell a device, and some content, we're going to put it together, the market buys it right away.

Well, I would argue that there's 50 iPod like emergent devices out there to be discovered; we just haven't found them yet.

REARDON: And from a technical side, I think that the bottom line is we've migrated slowly from an analog world to a digital world. And that is virtually complete now. And most every device is digital.

And so now what we've got is a rather interesting scenario where we've got three industry segments: the IT world, which is becoming the power of this thing by providing these processors and computer power and networks and things like that...

We've got the consumers who understand what the user wants to do and how that experience is going to manifest itself for them. And then we've got the network companies and the service providers and all of these guys who know how to do things like put phone lines and other kinds of services into your home.

And what we're going to have to see happen is partnerships between those three groups to basically pull this thing together. And I think one of the dilemmas we've got right now is we can't figure out who's got the lead role.

FAULKNER: How long do you think it will be before the Smart Home goes mainstream?

REARDON: I don't think there will be a, you know, smart home in a box, if you will. I think what's going to happen is we will see people like they do with their homes today: they paint them different colors, they like different styles.

So I think the key to this is going to be that who ever is the provider is going to have to bring out a set of packages.

If what's important to you is entertainment, here's the entertainment package. And you can get all these kinds of things, similar to what the cable company's doing today with regard to just that limited spectrum.

If what's important to you is security or safety, or if what's important to you is medical treatment of your aging mother or father or whatever else, the key to making this thing ubiquitous and mainstream if you will is to be able to offer the kind of variety that will allow people to pick and choose the things that they think would make their life experience better. And it won't be the same for everybody.

FAULKNER: Where in the marketplace -- aside from the healthcare opportunities that you just mentioned -- where do you see intelligent home technologies catching on in the near future?

REARDON: One of the areas we may see this thing emerge first is apartment buildings. And the reason I say that is because that will be an easy place to put in a set of capabilities and be able to leverage it, and be able to charge for it.

In fact, if you've got an apartment building next to another one and this one has all these wired and wireless capabilities and services, and the price is not substantially different between the apartments, which one are you going to go for?

Well, you're going to go for that one. Once you've had that apartment and now you move into a home, what, are you going to abandon all that stuff? Probably not. You're probably going to say, hey, wait a minute. I want to do that.

FAULKNER: I can imagine how this will create a whole new IT services arena.



REARDON: I think services is going to be...is going to have to be the mechanism for how this actually comes into place. We don't know who's going to be the driver in the services, but it's going to have to be that way because it will be too complicated.

And there are standards but not everything is standard, so if I want to put a Sony CD player with a Samsung digital TV with a GE device that monitors my air conditioning or something, there aren't standards right now for doing that.

And if I want to have that capability -- and I think people will -- somebody's going to have to connect that up. And then they're going to have to continue to upgrade it and maintain it and do those kinds of things.

So service is going to be I think the biggest opportunity here, and I think that's why this is looked at from such an exciting point of view from these companies, because when you thought about it as just a bunch of devices, it's interesting but low margin, can't do a lot. You know, you're kind of limited to what that purchase decision is.

But when you start thinking about it as a set of services that number one, integrate the thing together, and then extend the life of it, and then enhance it, and do all these other things, it becomes a very interesting business. And I think that's why there are so many companies that are interested in participating in this, and it's probably one of the reasons why there's such a large dilemma right now as to who's going to win out.

FAULKNER: This sounds like a monumental task that will demand deep co-operation among all the players. Are we talking about a necessity for not just open dialogue but for open standards here as well?

BAILEY: The Smart Home is going to require a lot of very intelligent software. It's not just the hardware, and the boxes, and the devices, and the processors, and the storage. It's going to be the code that makes all this stuff work together.

And writing that code, making sure it's based on some kind of open standards so that the things do work together, that's a major challenge that we're going to have to step up to.

Embedded software on the chip, all this stuff, it's still in the early days. We can do it, we haven't done it. But the momentum is there in the marketplace from the customers to make us do it.

So software standards, linking things together, that's a big part of what's going to drive this revolution that we're talking about today.

REARDON: Yes, the software is the key thing I think because you will, once you have this platform in place, you'll be in a position where you can add function by downloading software and having itself configure itself and start working, or [integrated] itself.

And that will be the basis for how a lot of the functionality enhancements will be done, and that's, you know, the capability I think that will really allow this thing to really excel and move quickly once the basic hardware pieces are in place.

BAILEY: All this seems pretty farfetched and crazy, but as Kevin was saying, this is all real today. All this technology exists. You can see it in use. The only question is how do you commercialize it, create a business model where you can make money on it and get people to pay for it. And that's just right around the corner.

Faulkner: And get all these device companies on the same page.

REARDON: Well, that may never happen.



[LAUGHTER]

But I do think we'll see alliances. I do think that there's no question that we will start to see either companies purchasing other businesses that they think are critical for the delivery of this, or forming alliances with companies that 10 years ago they wouldn't have even possibly even known who they were.

But we're going to see some changes, and it's going to happen because it's necessary. You are going to have to have that capability to interact with a network company, or a medical company, or something else. And that's going to create some strange bedfellows, but it's also I think going to be the catalyst for how this thing is going to eventually come about.

FAULKNER: Kevin Reardon, George Bailey, thank you both for being here today and participating. And, many thanks.

BAILEY: Thank you, too.

REARDON: Thank you.

[END OF SEGMENT]