

**CI Kitchen Standards Meeting
Friday 31 March 2000
AM Session**

Attendees:

MIT

Michael Hawley
Ted Selker
Kristin Hall
Beth Laughlin-Flood
Chris Newell
Jofish Kaye
Wendy Ju
Win Burleson
Linda Lowe
Wesley Chan

Thalia

Glen Cunningham
Tim Woods
Todd Byda

Merloni/Wr@p

Giorgio Mosca
Sergio Vitali

Kraft

Dave Behringer
Randy Sweeney

GE

Vivek Badami
Zi Hu

MIT/HouseN

Ken Wacks
Stephen Intille

Highpoint Systems

Mike Liebson

Invensys

Bret Hartnett
Bill Stafford

Tim Matt

Stop & Shop

Bruce Havamake

Association of Home Appliance Manufacturers

Jill Notini

Sears

Calvin Spann

Schott Glas

Peter Naß

Hans-Jürgen Lemke

Trialog

Antonio King

Intel

Mike Wrinn

Nick

Telaric

Scott Kroeger

RISD

Beatrice

Jane Langmuir

Best Buy

Gerald Nanninga

Mike London

Motorola

Kevin Brooks

Whirlpool

Richard Eisermann

SESSION I - APPLIANCES

We're all going to networking: white goods, small appliances, HVAC, security systems, etc. Unlike 15 years ago when people first talked of home automation, the time is now because the technology is here to make this happen. Companies are looking for new value because the saturation of the market is 100%. All we can do is wait for an old machine to break down.

What will that value be? We all have ideas. But the new value is in networking. The more things connect, the more value there is -- in the information.

This network needs a common base to get this value which we all need. The structure must be interactive. No one of us owns the house. There will never be an "All-Kitchenaid House" or "All-Whirlpool House". Therefore, if we cooperate, the value to all of us will be tremendous.

We need some sort of a kickoff. There are 4 or 5 big players in this industry worldwide. We need to get those CEOs together (even if over a golf game) to meet and decide the following: whether they will cooperate in this venture so we all benefit or whether they will kill it. How will this be killed? By everyone going their own way.

The ECR (Efficiency Consumer Response) was formed ten years ago here in the US to figure new ways to get value from the value chain. It's initiation was in a similar setting to this. Within 2 months, it produced a report of \$30 Billion. While the report was later found to be inaccurate, it achieved the goal of shocking people into action. We need that kind of shock to the industry right now. We need to work together. [Sergio Vitali]

Merloni has been developing this for 10 years, namely to extract information from appliances for many purposes. The idea was to get info from and network the appliances. In order to effectively use this information and network, Merloni's appliances must be able to talk to other companies' appliances. Hence, Wr@p.

CI is the right kind of development and the right kind of understanding. It's research has reassured Merloni that they are on the right track. Wr@p's engineering is software for networked appliances. Wr@p is about information - extracting and exchanging the right information via appliances.

In order for people to perceive value from networked appliances, they need: Content; Control; Additional Benefits. Otherwise, there is no reason to buy the new technology. But, by adding meaningful information to appliances, we can bring them to life in a meaningful way. [Giorgio Mosca]

Appliances have very long lives and the way we can extract value in a continuous manner is to provide software-based consumables. But, unless we have a clear universal platform for networked appliances, this won't happen.

We do not want to repeat other industries' past mistakes. We must remember that war scares off consumers. Instead, we need to remember examples of industries' which have succeeded by cooperating - MIDI, Bluetooth, etc. - and create conditions under which the universal language can be created.

Now, can this cooperation really happen? Or are we doomed to a Tower of Babel? Conversations at a very high level can make it happen. Perhaps we can foster that here at MIT, since it is neutral territory. [Richard Eisermann]

Thalia contends that such conversations are happening at every level. They have visited everyone and had those types of conversations with everyone in this room: Intel, Motorola, etc. the frustration lies in that everyone moves at different speeds. However, the technology is ripe and ready now. Right now. This discussion must happen now and remain ongoing. It doesn't matter if we agree to agree, agree to disagree or agree to agree eventually; the discussion must start now. [Tim Woods]

Appliance manufacturers must talk to providers of services in addition to talking to each other. Cisco, Intel, Motorola, etc. are as important as Maytag, GE, Merloni, etc. companies are still getting comfortable with how to make money in this new economy. There is no shortage of technologies...just a shortage of agreement. [Richard Eisermann]

We at MIT are looking at PC or cell phone standards instead of appliance needs. We need to first find the applications which we have for appliances and then make the architecture fit. [Wendy Ju]

As with all appliance companies, GE is still struggling with value. Appliances won't drive the networked home. At present, what is driving networking is entertainment and data sharing, not appliances. GE believes that appliances are a component of the networked home, but that the "killer app" for the home is entertainment. [Vivek Badami]

The record industry is a \$15 Billion a year industry. However, the appliance and food industries are much more than that. [Ted Selker]

When Thalia started discussion on the smart house, we realized that there was a lot of stuff on the bottom of the pyramid. The stuff you do on a daily basis just to survive. On this level, you interact with the house and the products in it. If you could do one thing, but execute four things on the bottom of the pyramid, that would add value. DVD Player vs. the Toaster. [Tim Woods]

What is the value added of connection, then? The consumer is killer on costs in this business. [Vivek Badami]

We can find applications. And the consumer does not have to pay \$200 more to get value. They can spend \$10 more with downloaded software applications and greatly enhance the value of the hardware. [Time Woods]

Look at how poor PC technology is: it is clunky, bulky and unreliable, crashing several times a day. But people are starving for it and willing to pay \$2000 for it. [Michael Hawley]

The question remains: What is the value added? [Vivek Badami]

Bob Metcalf would argue that the networking itself adds value. [Michael Hawley]

A retailer's take is to ask "Why not?". After all, price points are dropping for everyone. So, instead of asking "What is the value added?", let's ask "Why not?". Stocks are dropping already for all of our companies. So, why not. As long as we continue to hammer on price, we will kill this. Instead, how can we get people to say, "Hey! What's the latest fridge?" And shop for appliances the way they shop for cars or TVs or DVD players. [Mike London]

If the quality of the appliance goes down or if you have to hit `ctrl+alt+del` in order to make your morning coffee, that will scare off the consumer. If any one of us screws up the technology, we screw it up for everyone. [Tim Woods]

Health is another way to add value. Right now, appliance manufacturers are looking just within the walls of the house to justify the technology. However, if the networking and software technologies work as we've proposed, value can come from outside the house as well as inside. Imagine if you can have health management where you are - in or out of the home - instead of within the confines of the doctor's office. [Scott Kroeger]

People spent more on food than anything else last year. \$360 Billion alone on take out food. If these dollars continue to rise, how do we keep people in the kitchen? Entertainment. [Dave Behringer]

The difference between 10-20 years ago and now is this: The idea of appliances talking to each other is "Eh?!". But the idea of having your appliances talk to the outside world is cool and quite doable. [Jofish Kaye]

Power management is one "killer app". Right now, Americans don't have to worry about it as Europeans do. But the time of deregulation is coming to America - buying power by the hour or minute. Necessity breeds innovation and this is a necessity. [Sergio Vitali]

The idea of agents who could find you cheap power and negotiate for you on better power deals during heat waves and such. Imagine if you could come home and your

TV could tell you, “Hey! I saved you \$40 today!” [Richard Eisermann, Randy Sweeney]

Think of appliances as consumables, then you can make things smarter in cycles. [Tim Woods]

We need to think of the GUI, people’s ego needs and people’s interactive needs and wants. Appliances are going to be clients. No one wants a floppy drive built into the fridge. But a networked fridge can talk to the computer, which has a floppy drive. We can leverage the other resources within the house, so that you don’t have to redo the hardware every few years.

Think about it: who would carry weather radar with them? But people can and will carry a webphone which has access to weather forecasts so you don’t get caught in the rain. That’s the kind of thinking we need. [Randy Sweeney]

Thalia started in January of 1999, with the “myopic” view of putting this kind of technology into small appliances. Thalia, a division of Sunbeam, has made appliances that are in every room of the house. Smoke alarms, mixers, coffee makers, electric blankets, blood pressure monitors, bathroom scales, alarm clocks, PDAs. All appliances which are at the “bottom of the pyramid”.

For example, if you’re asleep and the smoke alarm goes off in the garage, the networked appliances would set off your alarm clock to wake you up and let you know which smoke detector was going off. The stand mixer can take you through a recipe. How much could a house’s “sleep mode” save me?

Their approach is product design for working moms. Pushing the appropriate information in to an appliance. On a diet? The scale can tell the mixer to suggest different recipes to help you lose weight. We can leverage the microprocessor for a higher level of functionality: have the coffeemaker synced to the alarm clock, etc. Above all, everything has to pass the “my mom says that she’d buy it” test.

Gradually, things can build up to a bigger benefit. Anything can sync to the alarm clock. There’s even a modem jack on the back so it can dial out and get weather and traffic reports. User interface is a big deal. They want to stay as far from a PC as possible.

There are two gateways to the home. The alarm clock is the lower priced gateway and the “home helper” PDA is the higher priced gateway. For a physical layer, they use the power lines. Other standards didn’t work as well.

Thalia’s products are like the foot in the door for the entire industry. For \$100, the consumer can try it, get comfortable with the technology and then step up to bigger appliances. They think of themselves as only producing the gateway products, not appliances, per se. [Tim Woods]

The problem is standards. We cannot wait 9 years like we did for CD-bus. Do we decide to remain a standards-driven industry? Or decide to let synergy drive the standards. Perhaps it is time for the latter approach, since the former has proved stagnant.

However, Thalia, too, has a proprietary protocol for driving their appliances, using Jini as a data format. They decided against UPP due to its reliance on TCP/IP. XML has been proposed as a standard data format for several meetings now. Perhaps it is time we implement that.

Finally, can we have a “home hobbyists” line which is hackable?

SESSION II - RETAIL

This is a sector shaken down to its core. For example, not that long ago, a graduate student doing research would go to the library or a bookstore and leaf through actual books. Now, a student goes online to look at material or buy it through Amazon.com.

So, how can retailers explain the value to their consumers? One brand talking to another brand and such. How can we explain it in a compelling and non-complex way? If retailers are put in the position of saying, “No. This brand won’t communicate with that brand.”, the whole thing won’t fly. Consumers will throw up their hands at the whole thing.

If we avoid cooperating on this, we are missing out on the opportunity to create more value for all of us. Instead, if we can tell the consumer that “this technology is going to simplify things and reduce stress for everyday things” - this they will get and they will buy. We need to work together to get this to work and to sell it to consumers.

So how would a common standard change the retailers’ game? No consumer will overhaul their entire house to rewire it for a standard. But, over time, they would make the change. Show them the end vision of what could happen as they buy/replace components. Show them that they could eventually get to this Nirvana of Connectivity.

Sales people will still be on the floor, at least at first. Catalogue and internet sales are still relatively small. Most people still want to “kick the tires” - touch and feel the merchandise. Groceries can create the channel for ordering “drudge goods” online. Once people are familiar with this, online shopping can spread down to white goods, as it has with brown goods.

We could see Sears as a “demo space”, where you can come in and see Nirvana in action. Instead of selling boxes, retailers can sell a lifestyle, an experience. In Europe, people buy appliances to fit into the decor and style of their kitchen. Not yet so in America.

Also, we would want to be able to steer consumers towards services. Making Sears your IT provider. Consumers just want to take stuff home, plug it in and have it work. We’re not there now, but hopefully would be there within 12 months. Not 5 years, that’s an eternity in the new economy.

At Kraft, they had a DVD player which would not work properly because a Fujitsu monitor across the room was throwing out RF on a frequency which would screw it up. A room full of engineers had trouble figuring this out. How could the average consumer find out stuff like this?

Maybe it will be like cars were 25 years ago, when you needed a god mechanic. Maybe it will be like the days of a university’s central computing system: it wasn’t

pretty, but it was always up and working. We don't want that kind of complexity trickling down to the consumer unless they wanted to be their own IS managers. So, how does this change the service contract?

Unfortunately, years of less-than-optimal personal computers and operating systems has trained people to be afraid of technology and assume that they will fail. No one wants to call tech support at 6:00AM to get a cup of coffee. We want to keep things simple. Simple delivery will work.

In addition, we need to design with integration in mind. How do we know what another manufacturer will do? However, if the dealer is the point of contact, the supplier of service, they can send you a software patch to fix conflicts. Or fix the refrigerator from afar during the night when you are not using it. In short, the retailer is now selling peace of mind.

However, we want to make sure that the retailer doesn't get caught in the middle of shoddy work by the manufacturers or clueless consumers. Consumers want a fix, not a cover up.

Major purchases are made by emotional, not intellectual reasons. People don't want boxes, they want fun, ease of life, and the like. We are all in this together and we can seal up such cracks by working together.

Taking the DVD/Fujitsu example, if service was savvy enough to do the following when I called in to say that my DVD Player isn't working: 1) dial up my house and see what other appliances I have (2) locate the Fujitsu monitor and determine that there is a conflict with the DVD Player (3) call me back and tell me to throw a blanket over the monitor and now see if the DVD player works - people would be very, very impressed.

The Amazon.com of service. Online. No schlepp, hassle or haggle. Just there for you. Amazon.com and Agents are extreme changes for the retail business. Discrete units with technology won't work in this environment. But if the appliances are all connected together, we can diagnose and answer problems throughout the house.

Presently, in the PC industry, tech calls promote abdication. No one is accountable for the quality of their work. Wouldn't it be great if everytime your PC crashed, you could automatically email the programmer who wrote that line of code or get 25¢ back from Microsoft? Right now, if you call tech support over a peripheral which conflicts with your computer, the peripheral company will blame the software company who will blame the computer manufacturer, who will ignore your calls.

Whose fault is it? It is all their faults. But if they would work together, the problem would be solved with one phone call. And that is why the retailer is vital. Consumers want solutions with one phone call - not 15.

So, what do consumers really want? It is all about relevance. Tying your coffeemaker to your alarm clock is wonderful to coffee drinkers and a nonsensical idea to non-coffee drinkers. Consumers get the technology. They understand it. What they want to know is how that technology is relevant to them.

Privacy is also a huge issue. Consumers must have control over their own information. After all, who owns the customer? The customer owns the customer. Consumers will make explicit choices over who they will partner with. They must own, control, provide access to their own model. Present abuses of personal information are severely poisoning the well of information technology. Giving out one's information is an investment and they need value in return/

Orwell was wrong. We've now got cameras everywhere, but technologies turned out to be diffusive instead of tying us all together under one man's rule. Thus, the consumer needs to be able to send data to where they choose. It is important to give that kind of control to the customer now. The amount of information which could be extracted from appliances is enormous. But it is potentially ballistic technology which could get people very upset.

Your personal information is your Intellectual Property. If you contract to give me access to it, I can not turn around and sell it, any more than I could hand patented information to someone. The European Data Protection Act provides such protection overseas, but the US has yet to act on this.

People are not scared of the unfamiliar, but are aware of the value of their personal information and want and need control over their own information.

There is tremendous financial income here for any company involved. Disintermediation. Our challenge is the big world beyond the appliance world. The business is changing and we need to get beyond our traditional boundaries to get value for everyone. Information and revenue streams are now treated differently. It is a new game. A new ecosystem. A new business model.

Cooperation benefits us all, especially consumers. Appliances will have \$56 Million in sales this year. That is huge! How do we mine that? the PC has shown us that the customer wants to be in control. The customer is willing to pay for answers.

We're thinking in terms of the present and/or the past. Look at the examples of the Chrysler Minivan, the microwave and the VCR. In each case, the companies created products without knowing if anyone would want or need it. Yet, once they were released, customers realized that they were something they needed and they bought them in droves. Don't wait for customers to ask for something. We are retrofitting an entire industry, but the time is now to do so.

We have spent decades training people to be disinterested in the kitchen and then wonder why people don't spend time in it. When appliances are as much fun to shop for as stereo or video equipment, people will spend more time in the kitchen.

Kitchen technology is 75 years old: motors, heaters, compressors. We have an opportunity to completely change this and raise the bar for the entire industry.

What is the new marketing paradigm? Right now, you can log onto Dell or Apple or Gateway and have the PC built to your specification. When will that happen for appliances? At present, factories are not set up to do that. However, people buy small appliances - at least - with emotion, fun and the like. The experience of buying the product is as important as the experience of the product itself. We need to first set up the scenario, then the consumers can relate. Relevance, relevance, relevance.

However, don't discount design. Look at the iMac phenomenon. Design is very important to the new consumer. In Europe, appliances are not only functional, but fit into the design of the kitchen. This needs to come to America. Why not be able to design your own appliances? Like you pick out a car or design your own PC. People want to be able to express themselves via their appliances. Why not design refrigerator doors so that you change them as you change your computer desktop. With e-inks and other innovations, this is now possible.

Some manufacturers admit that they go for a static "non-offensive design" with their products. However, take the example of Swatch. "Swatch" does not stand for "Swiss watch", but "Second watch" - the watch you could wear everyday to express your individuality. So, too, can it be with appliances. Present technologies (e-inks, etc.) and others in the pipeline allow us to push this envelope. As appliances manufacturers have said, in market studies, if half the people hate it and half the people love it, you have a winner. If everyone just says, "It's okay." it is a judgement which is the kiss of death to a product.

The American home is presently unharmonized. In Europe, appliances manufacturers and retailers sell kitchen design and aesthetic along with the functionality of the boxes. Soon, the downloadable changes to software and machines' performance will be available. It is time for those changes to come to American appliances.

It is time for the industry to design for tomorrow, not today. At present, the industry designs boxes to last for 20 years. You don't want to plan for obsolescence. But if the industry starts planning changes for tomorrow - software, upgrades, etc. - then the appliances can make their way into the home.

However, we must work together: as friends and partners, cross-industry. What about virtual branding? Why can't a consumer choose the "Martha Stewart House"? The consumer should have that choice of channel at the bottom layer. Have that choice, not have it chosen for them by a given manufacturer.

The technologies we choose now need to be upwardly compatible. Right now, networked appliances need low bandwidth. However, they must have the capability for high bandwidth as applications we've not yet thought of are brought into the home. Scaleability is key.

Perhaps we need to think beyond the present "20-year lifespan" model for appliances. The iMac phenomenon showed us that people will look at computers as almost "collectible computers". Can this not happen for appliances? Why own? Why not rent them from the companies? People PC has provided the model of people buying their service instead of the computer. When you think of this, it provides a proven, but very different equation for the appliance business.

In Japan, people browse for appliances the way they shop for cars. Changing them every 5 years or so instead of every 20. In Europe, appliances sell style and design as much as function. In America, appliances are designed for the "average" family with two kids and offers nothing on either end of the "family" spectrum. Appliance manufacturers need to realize that the definition of "family" has changed fundamentally in the past 10-20 years. A family can be five singles sharing a house. Or a single person. Or a single parent with part time custody of their children. Yet, there are no appliances which address the needs of these consumers.

In short, the technologies and times are right for change.