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# VII. CONCLUDING THOUGHTS

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## A. Continuing This Dialogue, Expanding Involvement

### A Separate Forum or Part of Museum Association Meetings?

- We held this forum because it is part of a grant. Is there something about this community that makes sense, or do we want to ensconce this in wider museum meetings? • Rob Semper, Executive Associate Director, Exploratorium
- Did you present this at ASTC and if so, how did they respond? • Michael Schiess, Project Manager, Physical Science Interpretation, Museum of Science, Boston
- There were a lot of people there and everyone in the room was involved with or seriously thinking about something like this. It seems like lots of museum folk out there are interested. • Doug Conaway, Resource Development Director, Center for Media Communication, Exploratorium
- I heard from two opinionated exhibit design people. One said, "This sounds like technology looking for a purpose." However, the same person also had an idea about designing their next exhibit with something like this in it, so it wasn't quite so negative. What about art museums? Are they talking about this? • Natalie Rusk, Project Director, Electronic Guidebook Project, Exploratorium
- I'm not sure. • Susie Wise, Senior Producer Interactive Educational Technologies, San Francisco Museum of Modern Art
- For this forum we wanted people from different components (museums, industry, etc.). Does it make sense to attach it to other museum conferences? • Rob Semper, Executive Associate Director, Exploratorium

### Involving Others In The Dialogue

- I suggest if you have another meeting, that preparation for the meeting be a communal effort. It was helpful hearing what others are doing. You could get names of other people and institutions doing things. • Larry Friedlander, Professor; Co-Director Stanford Learning Lab, Stanford University
- It might be interesting for people who are about to start, if they serve as case studies and we revisit what they are doing in one or two years. I like Larry's idea, but I also like the idea of following the people who came to this forum over time. • Melissa Alexander, Project Director, Origins, Exploratorium

### Introduce the Devices to the Dialogue

Maybe the next time we have this meeting we should use these devices and see if it helps us. • Larry Friedlander, Professor; Co-Director Stanford Learning Lab, Stanford University

### Value Of A Separate Forum

- I think the depth of what we have accomplished at this forum is considerable. One thing I've gotten from it is the idea of questions I should address. I would argue for a separate forum. We are where the Web was ten years ago. • Keith Braafladt, Director of Learning Technologies, Science Museum of Minnesota
- This feels like the right group of people talking about the right things. For a two day gathering this has been very productive for me. • Craig Rosa, Director of Information Technology, The Tech Museum of Innovation

### Collaborating on Convening Another Forum

We could collaborate with someone else to convene another meeting – it takes a lot of effort. I am hearing interest in doing something more. • Rob Semper, Executive Associate Director, Exploratorium

## A. Final Thoughts

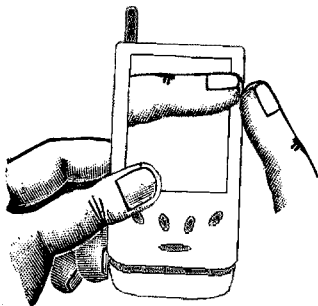
### A Call For Final Thoughts

I'd like to conclude with final thoughts you may have about what we have discussed. Is this worth it? What are you taking away? I would like to ask Goéry Delacôte, who has given a lot of thought about how this relates to this institution, to begin. • Rob Semper, Executive Associate Director, Exploratorium

### Benefiting From Diverse Input & Views

I was going to say exactly what Goéry said. I think it has been really interesting. Rob and I started working on funding for this project three or four years ago and some of our original concepts have turned out to be true. It's been an interesting process but what's been missing is an understanding of what others are doing or thinking; where our work fits in a bigger landscape.

Because I'm not an IT person or a content person but have a superficial knowledge of lots of things, it was good to hear from people with expertise in these areas. • Doug Conaway, Resource Development Director, Center for Media Communication, Exploratorium



### Simplicity And Integration

• I'm sorry I have not been able to be here during the entire session with you. I thank you all for being here and I am glad this is a mixed group of museum and industry people. It is good to have two groups asking different questions. I want to tell you why I am interested in what you are doing, but first there is a contradiction I have to address.

Museums like this one are rich in two things: the first is artifacts designed by talented, intelligent people; the second is people, both staff and the people who come here. And at some point they are all here, all together or in sequence, and that is what you have as a resource.

Some people cannot be part of that richness and have no access to that richness. When I have a visitor and I take them to an exhibit I discover things about the exhibit I would not otherwise have discovered. There's a depth of field that is huge. I hope you realize that depth here. This is very different than a single concept; it is experiential and complex.

So my main goal is to give people better access to this richness, to give them a deeper experience. The question is: how?

You are talking here about a portable tool, and I am very much in favor of trying that. But here is the contradiction: if you have a complex tool, it will be at a price we cannot afford. We have to focus on the things that are necessary to have on the tool so that it is useful; we need to eliminate.

So on the one hand we want to go deeper and more subtly in the experience with people and things. On the other hand we need focus. Part of the confusion may be that we are talking about two different things.

One thing is that it may not be a tool that is needed; it is a set, a battery of things. I was talking yesterday about whether we want portable or ubiquitous computing. It can be both. What you may have is a study of the ecology of a complex set of tools. So make decisions about portable devices within the context of a more complex battery of tools.

So in future sessions it would be good if there was discussion about portable devices with a united focus; about access; about consistent design compatible with other tools.

When you meet, I would ask two questions. First, what success have you had in focusing the use of the tool to address only a few questions well? Second, what success have you had in developing a global system of stimulation to deepen the access of people to this environment?

In places like ours, people barely scratch the surface because of time, history, and present trends. So I would like you to look in these two directions: simplicity and integration. • Goéry Delacôte, Executive Director, Exploratorium

## A Beginning Focus

- For me this has been a very rich experience and a lot of issues were raised. What I am hearing is that we are far from a solution, but at least have identified some focuses and can now move ahead. • Andrea Bandelli, Museum Consultant
- It was great to hear so many different voices. The discussions helped us focus down on things we can take away. • Rakhi Rajani, Researcher, Hewlett-Packard Research Laboratories

## Real World Applications, Specific Scenarios

- It was interesting to see real world applications and systems. In the research world you see a lot of hypothetical and lab situations, so it was good to see actual projects. Another thing I found interesting was that I'm not in the museum world so it was interesting to see this in one specific scenario – museums. I also think it's promising that people are thinking about a whole range of issues. • Jenna Burrell, Application Concept Developer, Intel Architecture Laboratories

## Forming A Network of Contacts

- I agree with what has been said previously. One thing that I'll take away is who is working in this area, thinking about this area, doing specific things – who I can contact when I have questions. • Paul Aoki, Member of Research Staff, Xerox PARC

## The Spirit of Sharing and Cooperation

- I think after having worked for many years on products with the idea of beating the competition, I found the atmosphere here was one of true cooperation and sharing knowledge which was very constructive. • Marcos Frid, Research Engineer, Hewlett-Packard Research Laboratories

## Informality and Honesty

- I just have a lot to think about and this will push me to think harder. I was worried that the tone of this session would be too formal, or people would mainly be trying to get across the idea that their own project was great. This had a really good tone. • Natalie Rusk, Project Director, Electronic Guidebook Project, Exploratorium

## Ideas and Motivation

- I have similar feelings about the communication aspect. I also gained many ideas for future projects and am motivated to finish our evaluation. • Susie Wise, Senior Producer Interactive Educational Technologies, San Francisco Museum of Modern Art

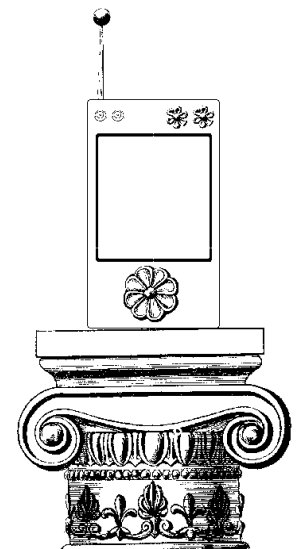
## Experiences, Evaluation Ideas, Communicating With the Community

- I'll echo the previous sentiments. I found others' experience interesting. Our focus is on evaluation so learning what others find interesting, valuable, or

## Be Holistic, Think Active and Personal, Forge Ahead

I have three thoughts (in addition to saying thanks for inviting me).

1. Think about all of this holistically. Don't divorce the function or purpose of the devices from that of the institutions. These have to tie in to our physical spaces and activities.
2. Think active and personal. The reason people get a Palm Pilot is that it allows you to control your environment. Since that's a function, figure out how to glom onto that. Not complete control, but something along those lines.
3. Even after we have identified all of the challenges and problems have no fear. Go ahead and do it and we'll have a whole bunch of new horror stories to share. • Daniel Molitor, Consultant

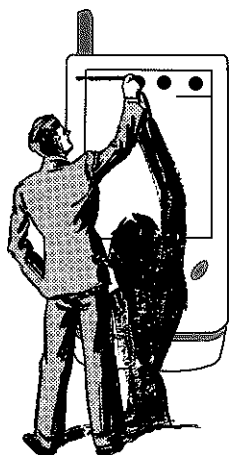


## Simplify

The message to me is simplify, simplify, simplify. And it's a message that we can extrapolate to so many different things, to other situations. • Mirjana Spasojevic, Project Manager, CoolTown Program, Hewlett-Packard Research Laboratories

## Focus, Simplification, and Future Feedback From Visitors

As we think about prototype design involving no more than five units, there are some things I'm eager to take back from this: focus, and making things simple. In our evaluations we ask people to tell us what they've just been through was about. The answers can range from "fish" to, "I did this . . ." I will be interested to see how their language changes with this. • Michael Schiess, Project Manager, Physical Science Interpretation, Museum of Science, Boston



noteworthy is helpful. Also learning how we can communicate better with the community.

Other than that, we'd be happy to publish in forums or appropriate places for the benefit of others in the field, just tell us where. • Allison Woodruff, Member of Research Staff, Xerox PARC

## Importance of Personal Content, Ideas About Text/Audio/Video

- For me what was tremendously affirming was finding that personal content is so successful. If people can relate it to themselves, they have a deeper experience. And that people wanted more personal stories about Exploratorium staff members. I feel I can go full speed ahead.

It also really surprised me in terms of what works and what doesn't regarding use of sound, versus video, versus text. I want to conduct research about that.

I was pleasantly surprised to see that even though people are skeptics about the technology, they're still jumping in with these projects. I find that encouraging. • Katherina Audley, Content Developer, Electronic Guidebook Project, Exploratorium

## A Clear Model

- I feel these two days have given me a better sense regarding what a project like this takes. I'm coming away with a very clear model, where there is a pattern and the issues are clear and how this fits into the museum experience. • Deborah Lawrence, Manager Interactive Technology Audience Services, San Francisco Museum of Modern Art

## Candid Stories, Common Problems

- This was really fun, and what was most fun was that the stories from others were candid instead of polished presentations. It's heartening to hear that others are hitting the same problems and issues that we are – to find out common problems so that we can reach common solutions. It would be nice to have a forum with a wider range of museums but the problem is that if you have different types it could get messy, with some just starting, some still just thinking about it. There would be a range of requirements. • Margaret Fleck, Senior Researcher, Hewlett-Packard Research Laboratories

## Creating Killer Apps That Blend Knowledge and Explore Beyond

- I've come away with a renewed sense of optimism about the potential for this technology to take the Exploratorium beyond the walls of the museum. This comes from an aside of Susan's. Imagine a tour of phenomenon in the city augmented by Paul Doherty and an artist created for the handheld. I'm not worried about people having to learn to use the technology. A pencil is technology and we all had to learn how to use one at one time. • Melissa Alexander, Project Director, Origins, Exploratorium

## A Better Sense of How This Might Fit

- We are at an early stage and it was good to hear that others have similar concerns as well as hearing the potential. I picked up new ideas about what could be done as well as some cautionary advice. What I liked best were the candid stories about real experiences where you got significant feedback and input. I have a much better sense about how this might fit in our larger gallery installation plan in a way that is appropriate to our space and our objectives. • Tom Steller, Chief Curator, Natural Sciences, Oakland Museum

## Universal Problems & Whether Technology Will Toss Us Some More

- Although we're not walking away with the solution, it's good to know that the problems are universal. I think it would be interesting if this group got together a year from now because the technology is changing so quickly, I wonder if we would hear the same problems or if technology would have generated yet more problems in the interim. • Michael Drennan, Technology Developer, The Tech Museum of Innovation

## Time to Jump On The Bus & Swap Notes With Fellow Passengers

- I'm just getting the lay of the land. I had heard glimmers about what SFMOMA and the Exploratorium were doing and thought, "God, the bus has left the station!" I'm glad no one asked me what The Tech is doing because I didn't have an answer. I felt it was crass asking about how much money each project spent and found that everyone was happy to say without making us sign a nondisclosure agreement. I feel I can call anyone here and ask questions, and that others' mistakes can help me figure out what we should do. I can now write a one-pager about how to continue, what to do. It's here, it's interesting, and it's early enough so that I think The Tech can make a contribution. And I would also like this group to get back together in a year – I think I'm the sixth person to say that. • Craig Rosa, Director of Information Technology, The Tech Museum of Innovation

## A Variety of Solutions Enhancing Distinct Experiences

- I'll be the seventh to say we should all meet again. It was good to see how different people use different applications to solve different problems. There are so many different solutions people have tried that are working to create experiences that are engaging people. It's not about a silver bullet, it's how to add to a particular experience. • Scott Beveridge, Internet and Multimedia Exhibit Manager, Museum of Science and Industry, Chicago

## A Continuum of Possibilities

- I'm more inspired, and I'm interested in investigating the continuum between the device as an information giver and a tool for content creation, • Michael Petrich, Co-Project Director, Playful Invention and Exploration Network, Exploratorium

## Pioneers in Early Development

I remain optimistic about the potential but this is clearly hard and takes a lot of work to do well. People need to bring their passion and interest to reach the goals of their institutions.

I'll echo what has been said about the range of the field – you get a feeling of chaos. But people shouldn't be afraid to do things; chaos is the mark of a field in early development and the only way to learn is to step out and do experiments. The people here have the chance to be pioneers. • Jim Thornton, Member of Research Staff, Xerox PARC

## No Clarity, Some Questions

I was hoping for clarity and I didn't get that. I think we do need to question whether we are taking the right direction or do we need to reconsider. • Karen Wilkinson, Co-Project Director, Playful Invention and Exploration Network, Exploratorium

### **Potential and Intriguing Questions In A New Domain**

I am coming away from this forum thinking we are on the right track. My hunch was that there was potential for these devices, mixing networks and public space, and I didn't hear anything to contradict that hunch. To me, the questions that emerged are as interesting as the results. And it was interesting to me to get these diverse communities together and talking.

I want to thank you again for coming to build this learning community where we are starting a new domain of work. That's what this is about. • Rob Semper, Executive Associate Director, Exploratorium

## **Good Take-Away Ideas For A Starting Museum**

- I'm changing my feeling of initial scepticism to one of critical enthusiasm. This has been perfect for giving me something to take back to my museum. It allows me to take ideas, suggestions, questions, so for a starting museum, this has been ideal. • Keith Braafladt, Director of Learning Technologies, Science Museum of Minnesota

## **Interrelated Points Emerging From Chaos**

- Regarding the question of whether we got anywhere with the chaos, as I look at the butcher paper postings on the wall it looks like the usual chaos. But we had the same discussion a variety of different ways and it's possible to see that it is all interrelated. • Margaret Pezalla-Granlund, Museum Consultant

## **A Sense of "Aha" And An Urge To Go Deeper**

- I'm sorry I missed the first day of this session and I'm sorry I missed the project demonstrations, which I really wanted to see. The thing I care most about, as a theater person and as a teacher, is giving a shapely experience that extends in time. I don't want to be part anymore of overwhelming people. I discovered as a teacher in the past that I'm successful if there are two things I can bring together – a sense of "Aha!" and the ability to penetrate deep. If we can use this to give people a moment of perception and insight that they can grapple with and use, we will have been successful. So if I were doing this research I would focus on what precisely it is that can awaken a person's attention that will make them want more and more and explore more deeply. • Larry Friedlander, Professor; Co-Director Stanford Learning Lab, Stanford University

