Center for LifeLong Learning & Design

University of Colorado at Boulder

Wisdom is not the product of schooling but the lifelong attempt to acquire it.
- Albert Einstein

Beyond "Couch Potatoes": From Consumers to Designers and Active Contributors

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Foreword from Amusing Ourselves to Death
by Neil Postman

We were keeping our eye on 1984. When the year came and the prophecy didn't, thoughtful Americans sang softly in praise of themselves. The roots of liberal democracy had held. Wherever else the terror had happened, we, at least, had not been visited by Orwellian nightmares.

But we had forgotten that alongside Orwell's dark vision, there was another - slightly older, slightly less well known, equally chilling: Aldous Huxley's **Brave New World.** Contrary to common belief even among the educated, Huxley and Orwell did not prophesy the same thing. Orwell warns that we will be overcome by an externally imposed oppression. But in Huxley's vision, no Big Brother is required to deprive people of their autonomy, maturity and history. As he saw it, people will come to love their oppression, to adore the technologies that undo their capacities to think.

Foreword from Amusing Ourselves to Death

What Orwell feared were those who would ban books. What Huxley feared was that there would be no reason to ban a book, for there would be no one who wanted to read one. Orwell feared those who would deprive us of information. Huxley feared those who would give us so much that we would be reduced to passivity and egoism. Orwell feared that the truth would be concealed from us. Huxley feared the truth would be drowned in a sea of irrelevance. Orwell feared we would become a captive culture. Huxley feared we would become a trivial culture, preoccupied with some equivalent of the feelies, the orgy porgy, and the centrifugal bumblepuppy.

As Huxley remarked in **Brave New World Revisited,** the civil libertarians and rationalists who are ever on the alert to oppose tyranny "failed to take into account man's almost infinite appetite for distractions". In **1984,** Huxley added, people are controlled by inflicting pain. In **Brave New World,** they are controlled by inflicting pleasure.

In short, Orwell feared that what we hate will ruin us. Huxley feared that what we love will ruin us.

This book is about the possibility that Huxley, not Orwell, was right.

Children Creating their Own Jewelry

Observations

▪ **what is different from buying finished products:**
- work material is needed
- tools are needed
- work place environment is needed
- a coach or facilitator may be needed

▪ **other issues:**
- this is a unself-conscious culture of design → the kids do not have to articulate what they want; the emerging artifact talks back to them
- power users may emerge in such environments

▪ **differentiate between different domains**
- "hand-made" and crafts (e.g.: jewelry, Hypergami,…..)
- learning something (Lego, FischerTechnik, Hypergami. …)
- utility objects / "assembly-required" consumer goods — e.g., grills, inexpensive furniture, toys, exercise machines

Different Opinions — Some Remarks from Students

- **from Chinese/Japanese students**
    - I had no designer experience in school education that I can remember.
    - I was astonished at heated arguments in the USA's classroom when I first took a course at CU. Some time students act as teachers. They speak out their minds and opinions loudly.
    - In China, students are taught to respect instructors, which is good, however, the students are only supposed to be listeners and followers, and students and instructors are never at the same level. Therefore, there's no way for students and instructors to be co-learners and co-designers. There's an old chinese saying that youngsters should not point out elders' faults. Teachers are superior.

- I am very offended by the proposal that I have been a "passive consumer" in my own education.

- Humans want things as easy as possible for them. The reason we are a consumer society is because that's what we want to be.

- Consumption and design are very closely related. There is no consumption without design, and no design without consumption.

Some Remarks from Students — Continued

- My best designer experience has come from my own ambition. Developing a hospital intranet where data distribution and accuracy has been extremely challenging. The other part of this experience is the fact that the nature of it brings me into interaction with a number of professionals with different experiences and understandings of technology. Assisting them and bringing them to a greater understanding of the power behind technology is very rewarding.

- Designing systems that can take advantage of contextual factors at use time is very interesting.

- They problem with giving students power to decide what and how they learn —to let them be significantly involved in the design of their own academic system — is that they don't yet have the knowledge (and in some cases, maturity) to make the right decisions. How does a physics student decide on a curriculum? He doesn't know what he can learn and what he needs to know to learn it, only his professor or another more knowledgeable person does.

- Design issues can't always be left up to the user because the user doesn't always know what's best. Why else is there a separation between children and adults?

Beyond Binary Choices — The Consumer/Designer Spectrum

- **claims:**
    - there is nothing wrong being a consumer (watching a tennis match, listening to a concert, ...)
    - the same person is and wants to be a consumer in some situations and in others a designer
    - consumer / designer is not an attribute of a person, but of a context

- **problems:**
    - someone wants to be a designer but is forced to be a consumer (personally *meaningful* **activities**)
    - someone wants to be a consumer but is forced to be a designer (personally *irrelevant* **activities**)

Beyond Binary Choices — The Consumer/Designer Spectrum

Consumer <--> Designer
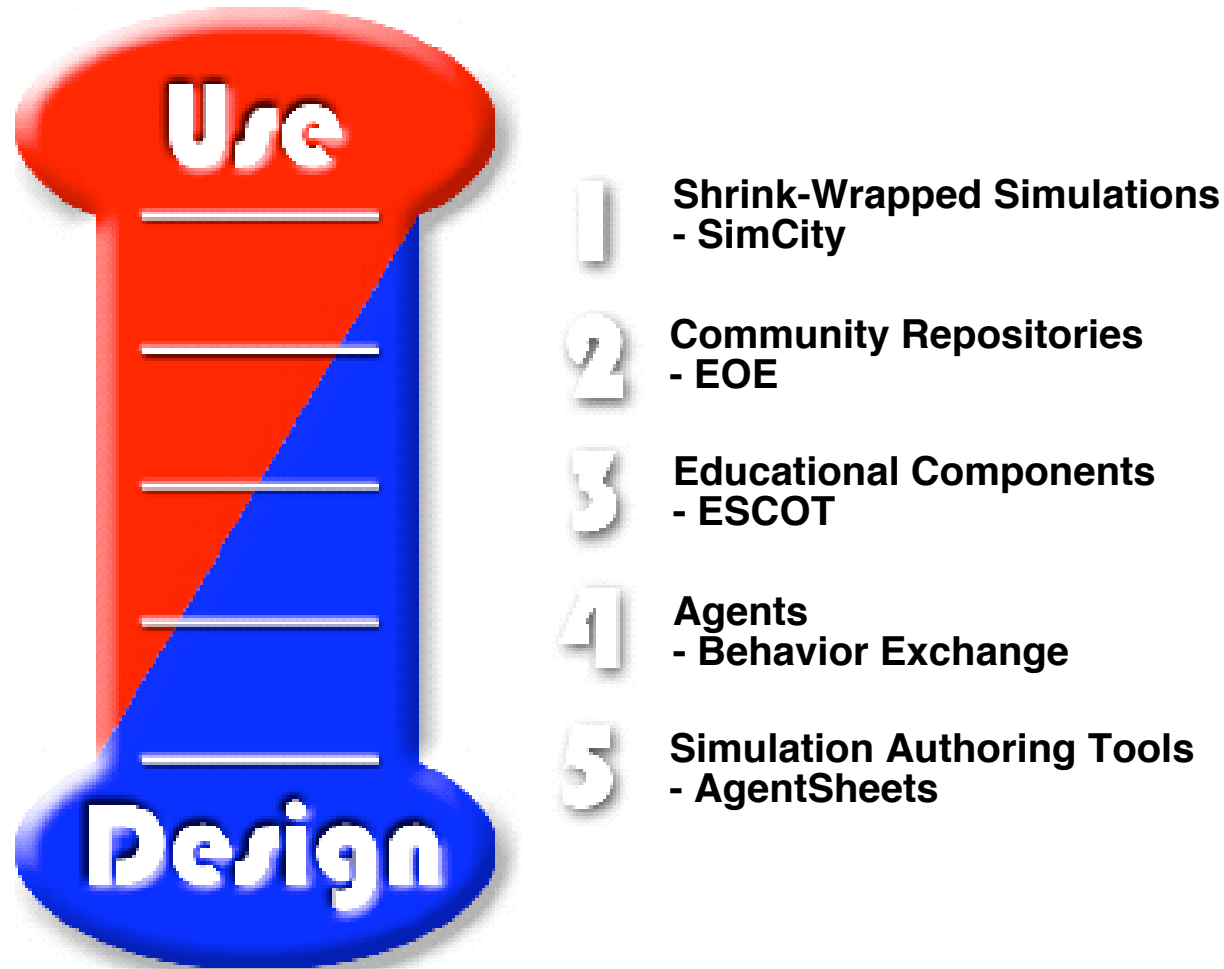
passive consumer

active consumer

end-user

user

power users, local developers

domain designer

meta-designer

The Use / Design Spectrum
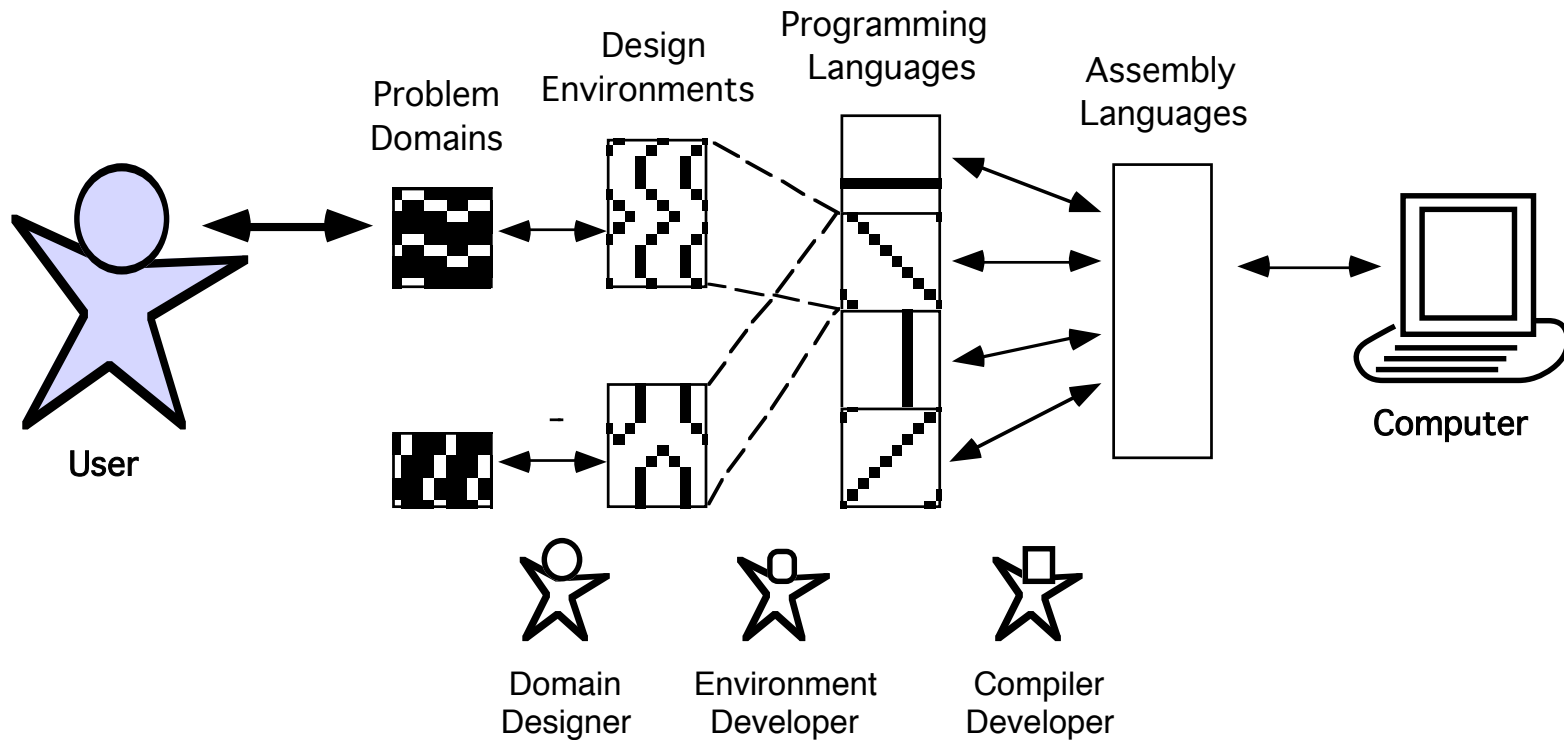

Shrink-Wrapped Simulations
- SimCity

Community Repositories
- EOE

Educational Components
- ESCOT

Agents
- Behavior Exchange

Simulation Authoring Tools
- AgentSheets

see: A. Reppening, A. Ioannidou, J. Phillips "Collaborative Use & Design of Interactive Simulations", Proceedings of the Conference on Computer Supported Collaborative Learning (CSCL '99), Stanford, 1999, pp 475-487
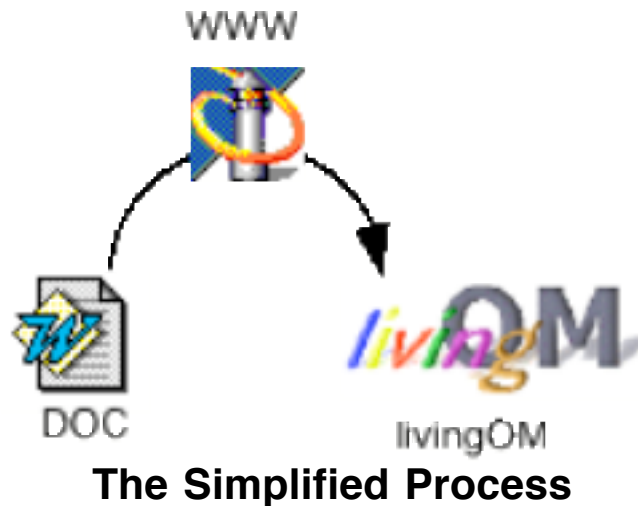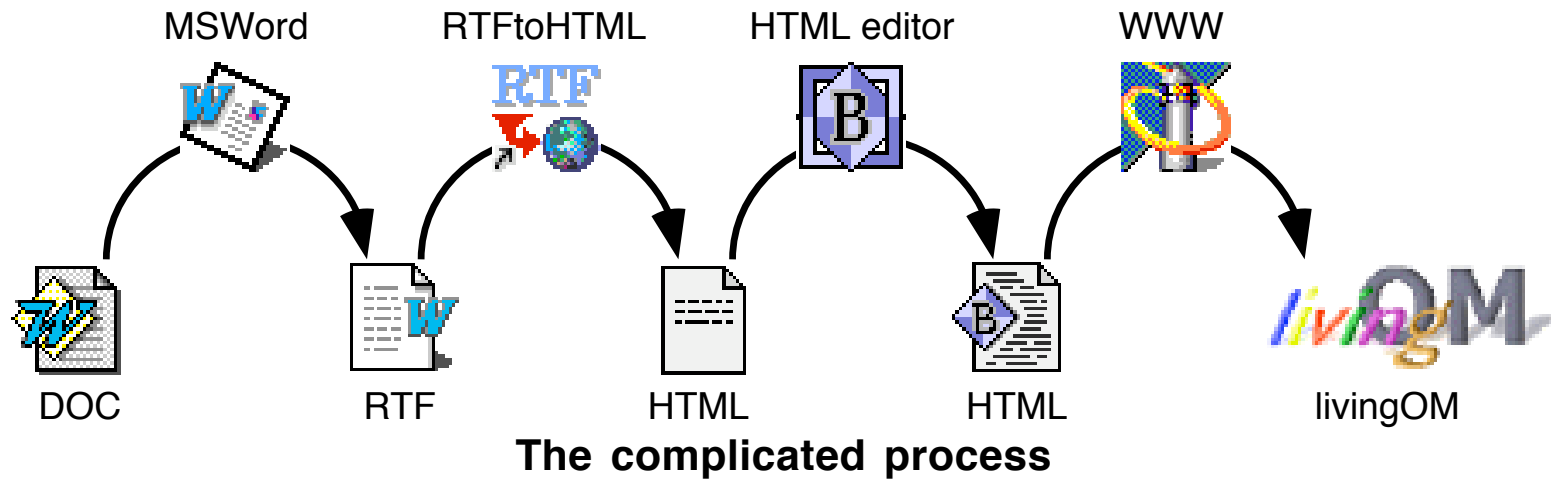
Claims and Observations

- **migration path** → how can we support people to become incrementally more competent, engaged

- **division of labor** (→ 3rd generation design methodologies)
  - professional designers play an important role in our society
  - the "average" person does not want to build her/his own houses, design her/his own car, or write her/his own software system or sorting routine
  - All people do not have the time to participate equally in all aspects of the political system in order to become fully engaged and informed, and therefore rely on intermediaries who act in their interests.

- **Horst Rittel:** *"The experience of having participated in a problem makes a difference to those who are affected by the solution. People are more likely to like a solution if they have been involved in its generation; even though it might not make sense otherwise"*

# Support for a Migration Path — A Layered Architecture Supporting Human Problem Domain Interaction

User

Problem Domains

Design Environments

Programming Languages

Assembly Languages

Computer

Domain Designer

Environment Developer

Compiler Developer

A Meta-Design Effort: Supporting Users to Act as Designers / Active Contributors to the LivingOM

MSWord   RTFtoHTML   HTML editor   WWW

DOC   RTF   HTML   HTML   livingOM

The complicated process

WWW

DOC   livingOM

The Simplified Process

Comparing Consumer and Designer Roles

	consumer	designer
activity	use, listen, surf; access of existing information; acquire prerequisites for engaging in design activities	construct, make your own waves; informed participation
learning effort	small	large
depth of understanding	shallow	deep
engagement	normal	substantial
learning opportunities	limited because no artifacts are created	the "back-talk" and the "breakdowns" from the artifacts created lead to learning opportunities
mismatch	wanting to be a designer in personally relevant activities	wanting to be a consumer in personally irrelevant activities
rewards	pleasure	develop new skills, peer recognition, social capital,

High-Tech Scribes, Power Users, and Knowledge Workers in Domains

tool knowledge

domain knowledge

high-tech scribe   power-users   knowledge workers
boundary objects / bridge objects
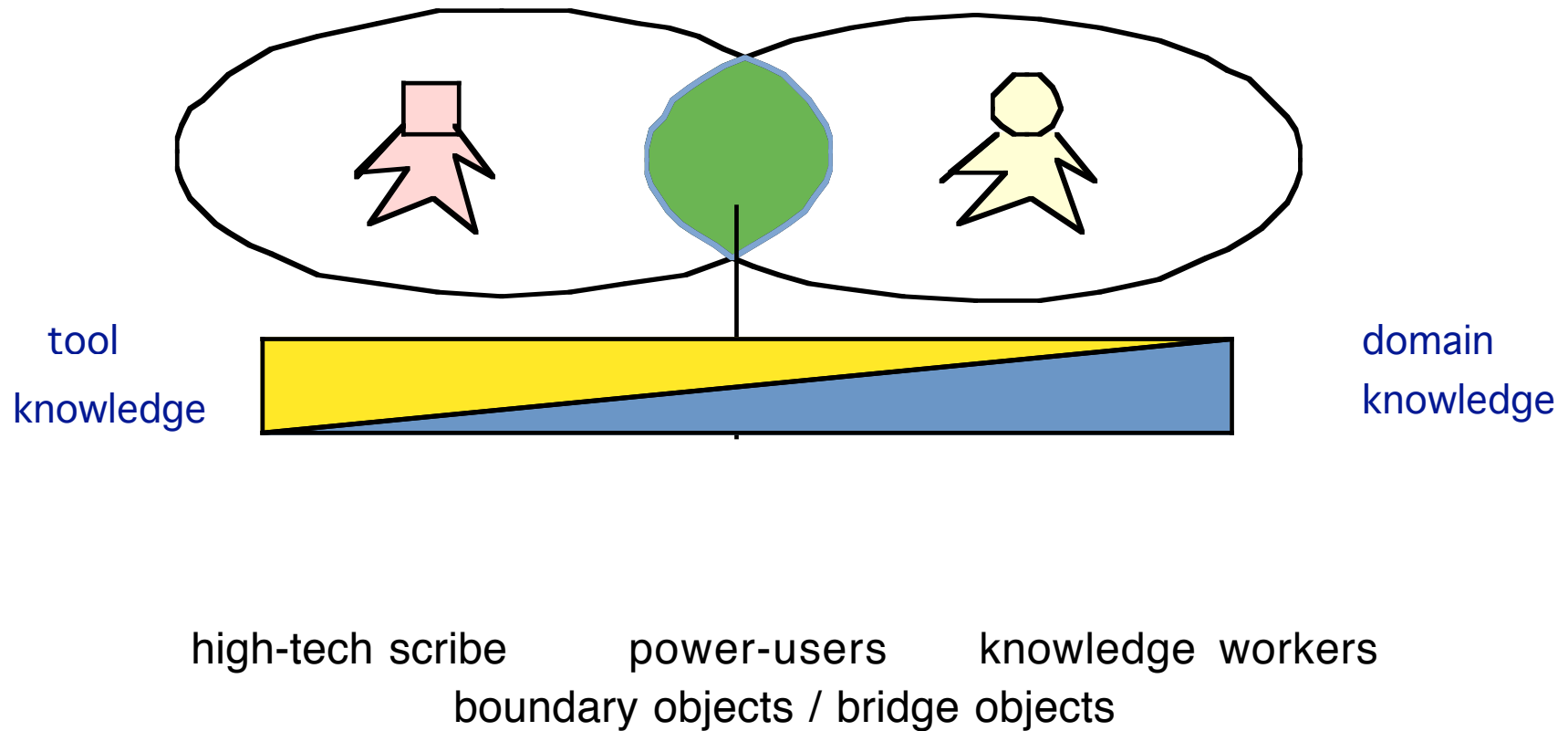
Technology and Media Support for Consumer and Designer Roles

- **Consumer Roles**
  - TV
  - lecture (students in classrooms)
  - citizens
  - printed version of the **Boulder County Healthy Communities Initiative (BCHCI) indicator report**
  - Web (M1 model)

- **Designer Roles**
  - DODEs
  - Envisionment and Discovery Collaboratory
  - PitaBoard
  - Dynasite / livingOM / Swiki
  - Agentsheets / Visual AgenTalk / Behavior Exchange
  - Web (M3 model)

Duality between Learning and Contributing
—
LCM → LCM**S**

**End-User Modifiability,
End-User Programming**

Learning on Demand
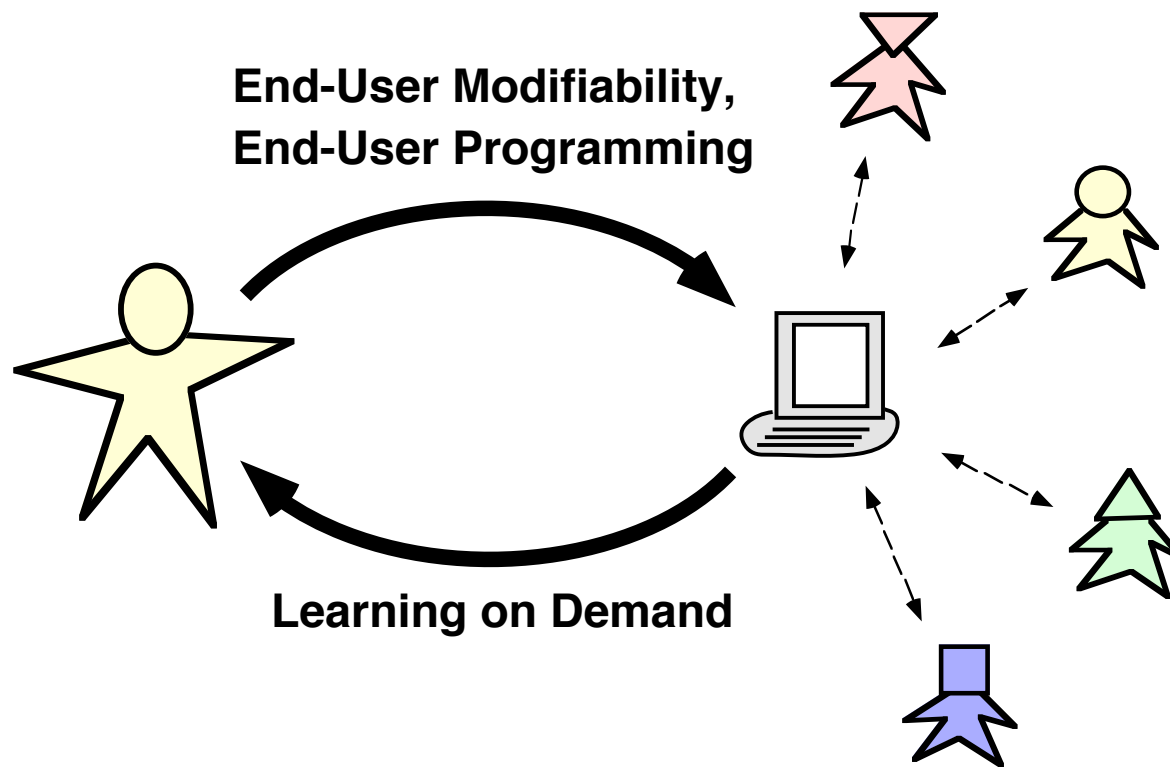
Consumers / Designers ←→ Social Creativity

- a designer culture is a necessary, but not a sufficient condition/requirement for social creativity → Social Creativity: Only possible among Humans with a Designer Mindset?

- Unproven Claims (Brown, J. S. (1991) "Research That Reinvents the Cooperation," Harvard Business Review, Jan/Feb 1991, pp. 102-111)
    - p 106: "technology will become so flexible that users will be able to customize it ever-more precisely to meet their particular needs — a process that might be termed "mass customization"
    - p 108: "provide people with easy-to-use programming tools so they can customize the information systems and computer applications that they work with"

- high-tech scribes: putting owners of problems in charge → unself-concious culture of design:
    - computing today: the world is separated into a population of elite scribes and a much larger population of intellectually disenfranchised computerphobes (similar to the written word before the printing press)
    - people can not do what they want until they get the attention of an expert who will tell them how they can do it

Meta-Design

- **meta-design =** how to create new media that allow users to act as designers and be creative

- **why meta-design?**
  - design as a process is tightly coupled to use and continues during the use of the system
  - address and overcome problems of closed systems
  - "underdesign"
    - example: American constitution
    - create opportunities for design at use time
    - create design opportunities rather than design solutions
  - beyond participatory design → design for change
  - transcend a "consumer mindset"

- **impact of meta-design**
  - *"if you give a fish to a human, you will feed him for a day — if you give someone a fishing rod, you will feed him for life" (Chinese Proverb)*
  - can be extended to: *"if we can provide someone with the knowledge, the know-how, and the tools for making a fishing rod, we can feed the whole community"*

Design and Use Time

Difference between Printed and Computational Media

Consumer <---> **Designer**

T V
      Printed Media
           Current Computational Media
                Envisioned Computational Media

- **print media:** a *fixed* context is decided at design time

- **computational media**: decision at use time can take advantage of contextual factors only known at use time (e.g., dynamic forms, dynamic websites, ...)

- **challenge:** articulation of contextual factors at use time (about tasks, users, social systems,.....) — end-user programming, specification sheets, usage data, ...

Claim: Seeding, Evolutionary Growth, Reseeding (SER) requires a Designer Culture
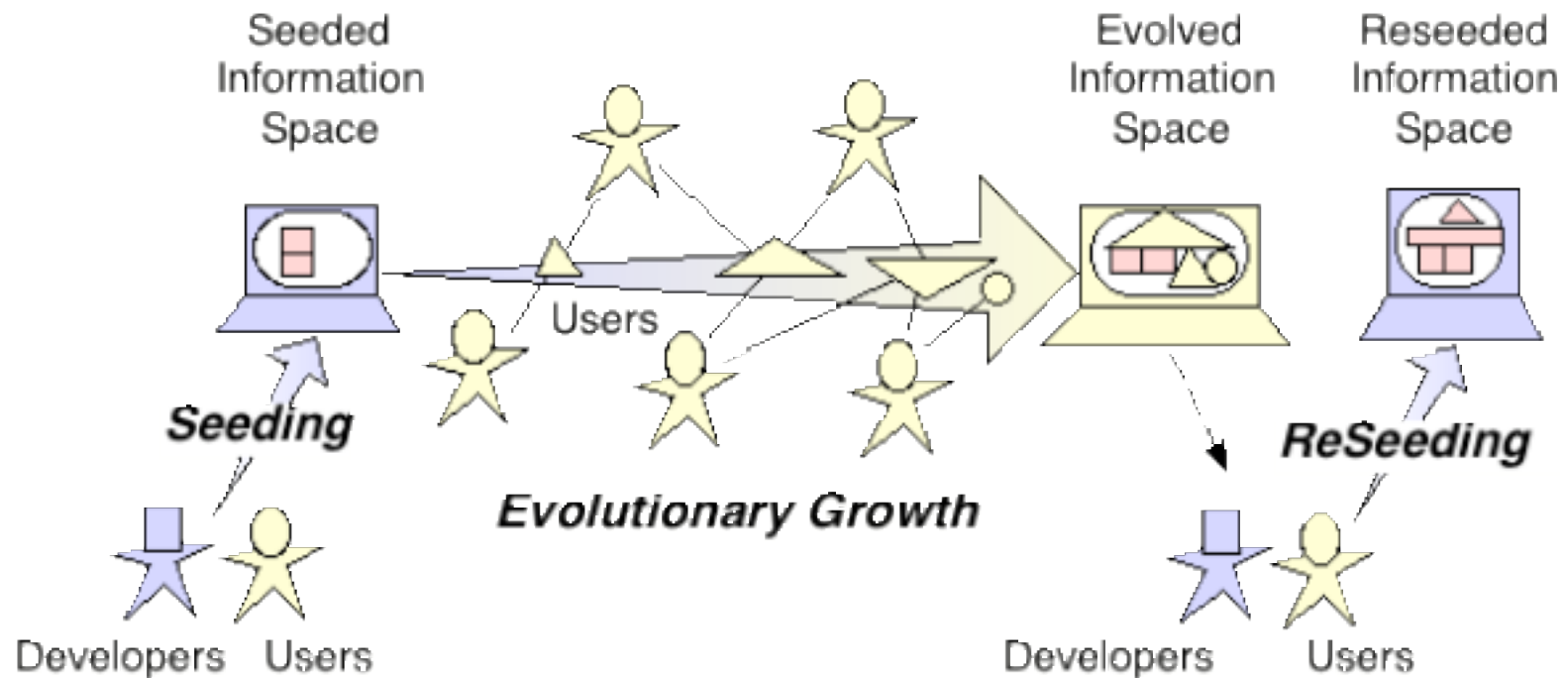
The Ubiquity of the Consumer/ Designer Perspective

- **learning and education**
  - **deschooling society (Illich):** "schools and universities = reproductive organ of a consumer society" and "people who are hooked on teaching are conditioned to be customers for everything else"

  - **courses as seeds** (rather than finished products) become a viable concept

- **concerned citizens:** "taking control of our lives" → Envisionment and Discovery Collaboratory
  - computational environments and reality should not be build by experts, with everyone merely interacting with it

  - "*limited technical acumen*" → is not a trait determined by someone's DNA like eye color; it is a convenient label employed by those who do not wish to expand the energy to enrich the technical acumen of their community

Social Capital — Motivation and Rewards

- what will make humans want to become designers/active contributors over time? → claim: serious learning does not have to be unpleasant but can be personally meaningful, empowering, engaging and fun

- what will make humans want to share? → requires: culture change, community knowledge bases, distributed memories

- who is the beneficiary and who has to do the work?

Mismatch Problem in Teaching and Learning

Teacher	Student	Example
authority ("sage on the stage") **{expert, teacher-run}**	dependent, passive **{consumer}**	lecture without questions, drill
motivator and facilitator	interested	lecture with questions, guided discussion
delegator	involved	group projects, seminar
coach/critic ("guide on the side") **{meta-designer}**	self-directed, discovery-oriented **{designer, student-run}**	self-directed study group, apprenticeship, dissertation

- **major mismatches :**
    - dependent, passive learners take courses with non-directive teachers, and
    - self-directed, discovery-oriented active learners take courses with directive, authoritarian teachers.

Assessment

- **role of professional designers**
  - division of labor
  - claim: the "average" person does not want to build their own houses, design their own car, write their own software system / sorting routine
  - all people do not have the time to participate equally fully in all aspects of the political system in order to become fully engaged and informed
    → intermediaries, facilitators

- **users as designers**
  - one of the major roles for new media and new technologies is not to deliver information to individuals, but to provide the opportunity and resources for social debate and discussion
  - a departure from HCI thinking → to look at users not simply as objects of study, but as active agents within the design process itself
  - full participation from users →requires training and active cooperation, not just token representation in meetings or on committees

Trade-offs in a "Do-It-Yourself Society"

- **examples to think about:**
  - self-service gas stations
  - checking out your own groceries
  - online banking
  - making your own travel reservations

- **a researcher in our center:** *"You're not going to make a Hollywood feature with iMovie, but you can make some pretty cool home movies from the holidays."*
  - success of CLever video presentation
  - my skiing movie as another example

- **core technologies ←→ occasional technologies**

Conclusions

- differentiate between consumers and designers by **questions asked / problems perceived:**
  - *Consumer*: Is a new future coming? (for example: in developing the new media of the future, the social scientists / humanists should not be content with spectators and Cassandra roles)
  - *Designer*: How can we invent and create a new future?
  - being a consumer or a designer is a *mindset*

- **Claims**:
  - the future is not out there to be "discovered", but it has to be *invented and designed*
  - the question: *who* will design the future? (we should not be content with reflecting on and evaluating designs developed by other communities, e.g., Hollywood)