



WAYS: Recall All You See

WAYS.shortURL.com

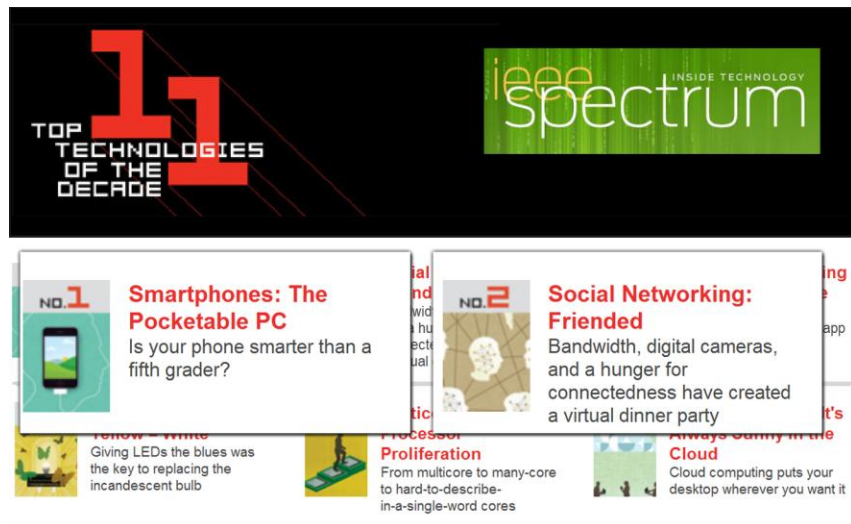
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Related Work

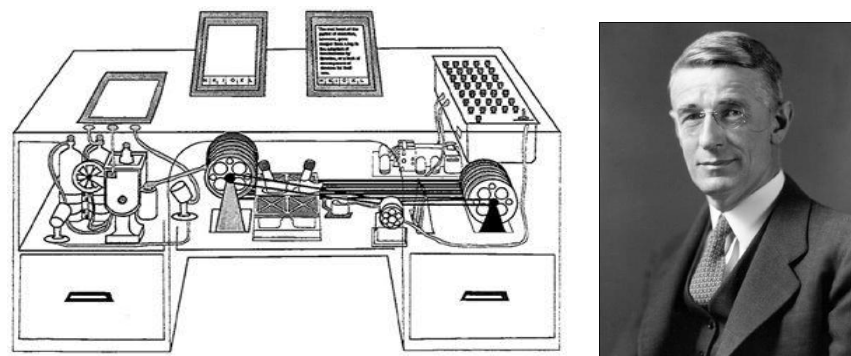
IEEE Spectrum - JAN 2011

- **Social networking** and **smart phones** are the wave of the future



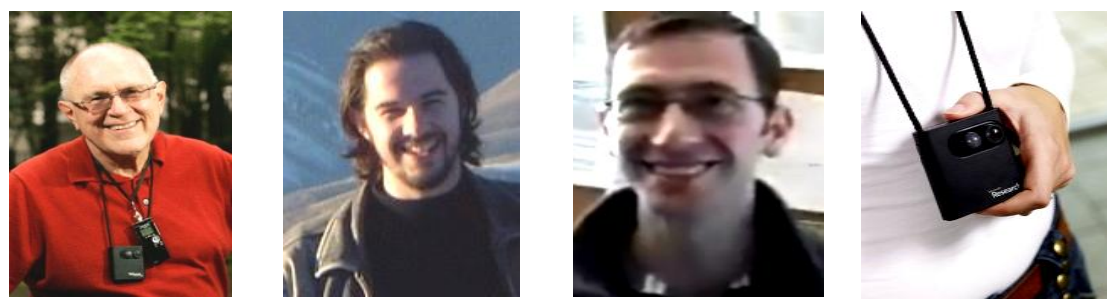
MEMEX, 1945

- Vannevar Bush



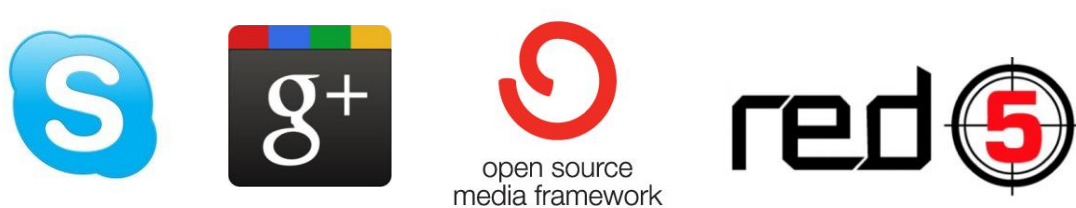
MyLifeBits, 2001-2006

- Microsoft BARC : G. Bell, J. Gemmell, R. Lueder



qik and bambuser, 2007+

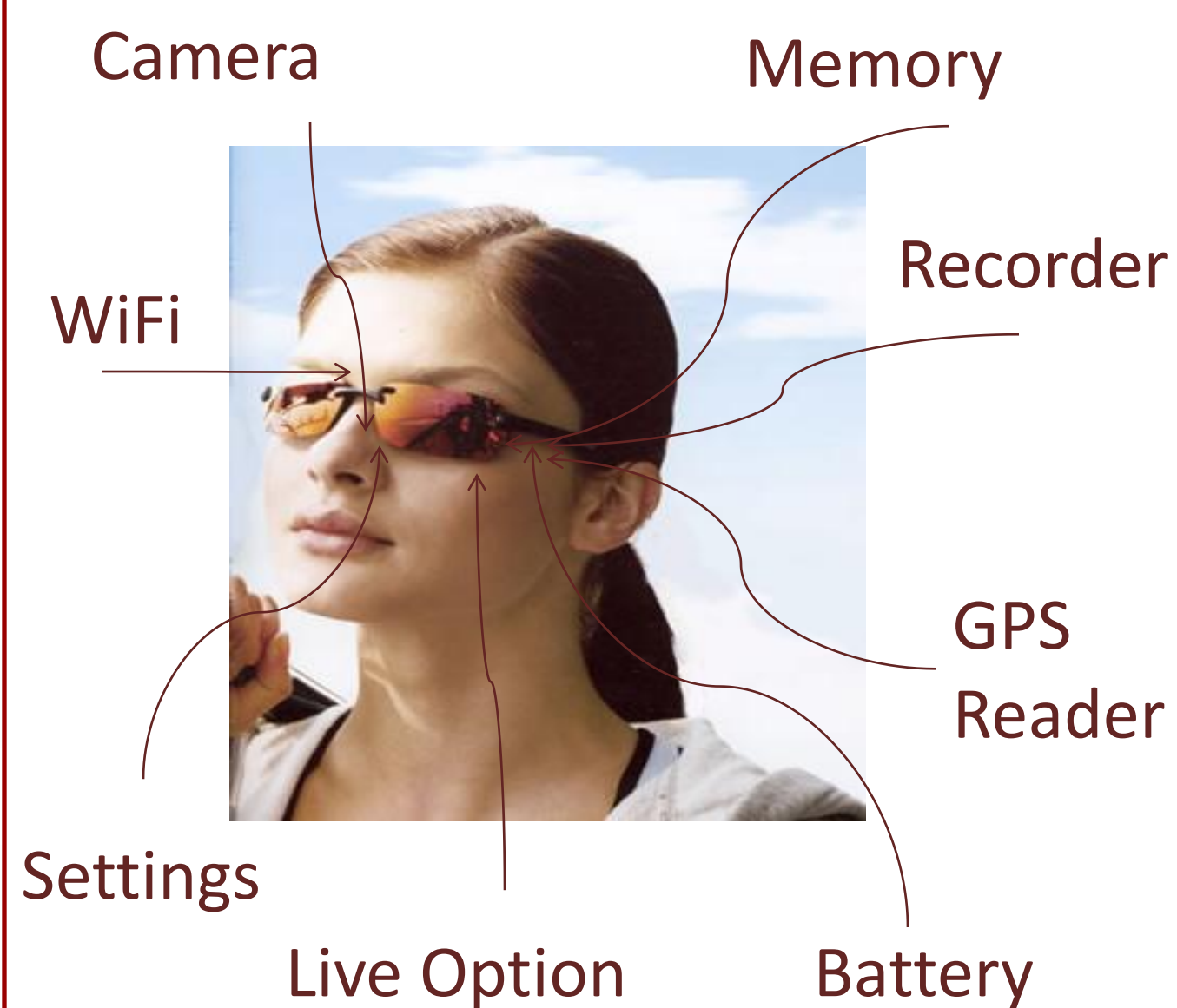
- Share life as it happens



WAYS: Future Internet

Record and Store

- Inexpensive Smart Devices



Recall, Share and Display

- Capture your life experience as it happens and share your *must see moments* with your followers across the globe



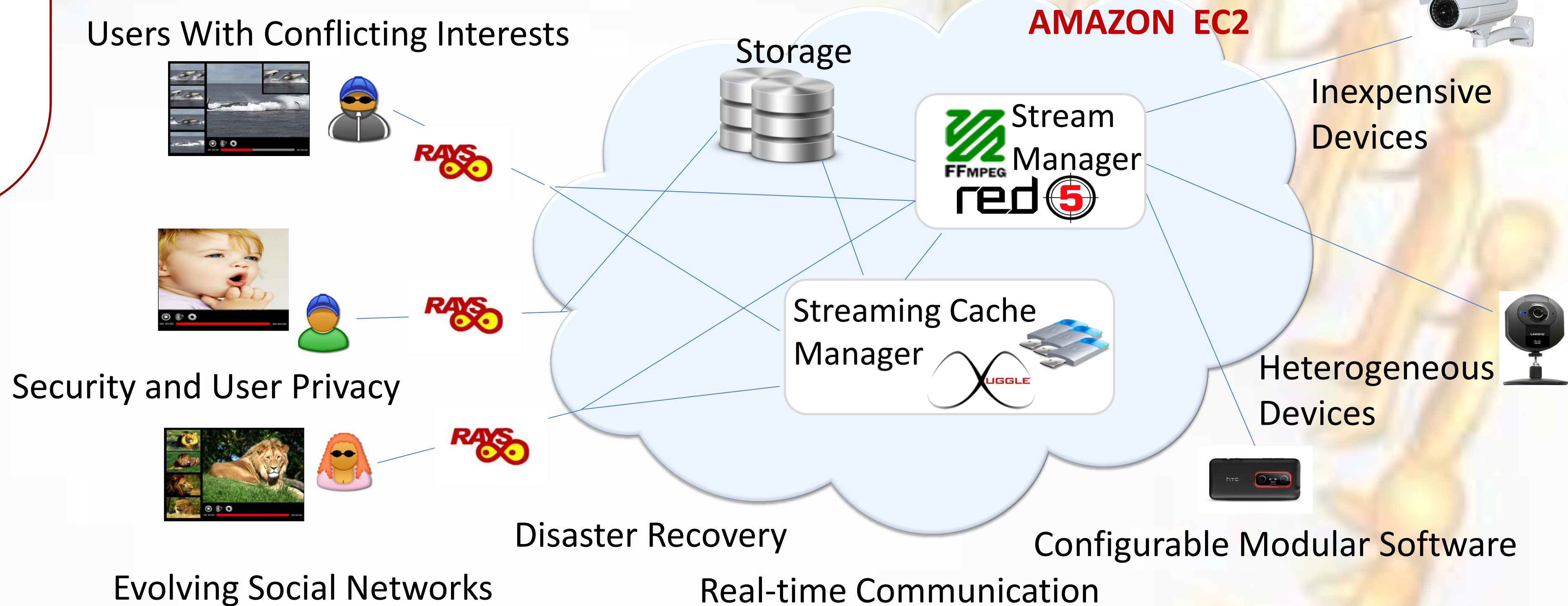
Administration



Research Agenda

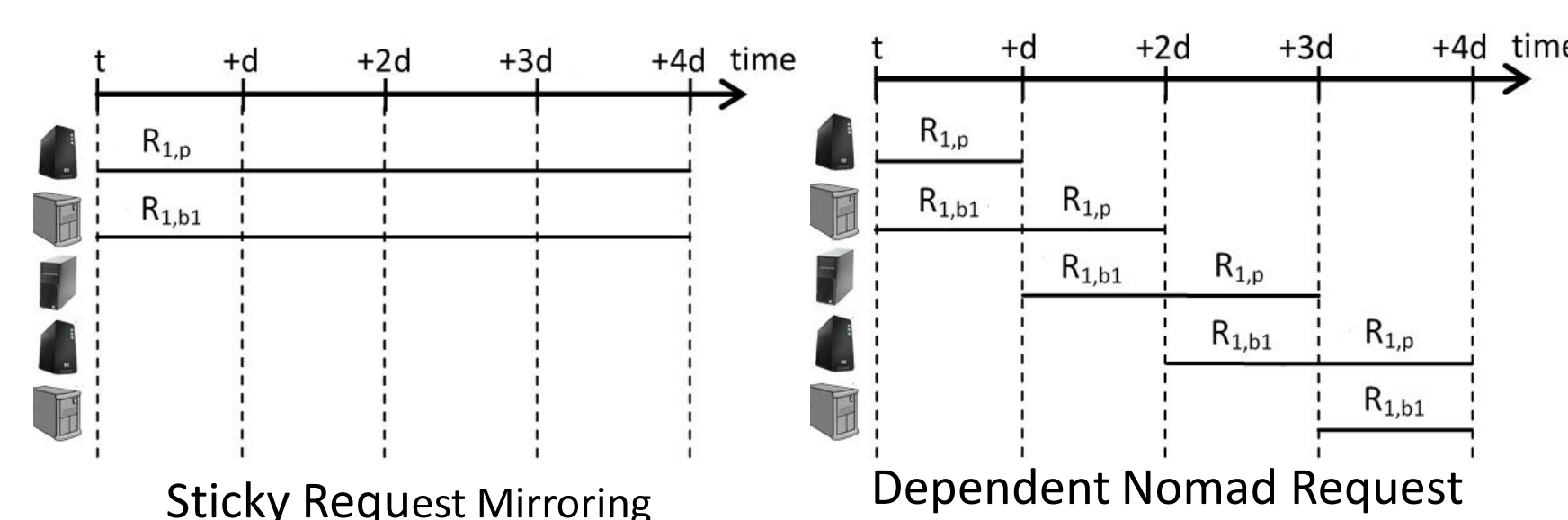
- RAYS applications:
 - Recollecting, Remembering Intentions, Retrieving, Reflecting, Reminiscing
- **Social Networking**
- Robust real-time interactive streaming
 - Universal multimedia experience
 - Open source, modular and configurable software
- RAYS performance using cache managers
- Effective user interfaces and devices
- Effective social search/retrieval mechanisms
- Scalability and Data Availability
- User Driven Features

WAYS: From Access To Experience



Data Loss

Node Failure



MTTR	1	5	10	15	30	1	5	10	20
	Min	Min	Min	Min	Min	Hr	Hrs	Hrs	Hrs
MTTDL	1,226	245	123	82	41	21	4	2	1
	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yrs	Yr

Memory Contention

Figure 1:
Number of Summary data served using DA-CLRU

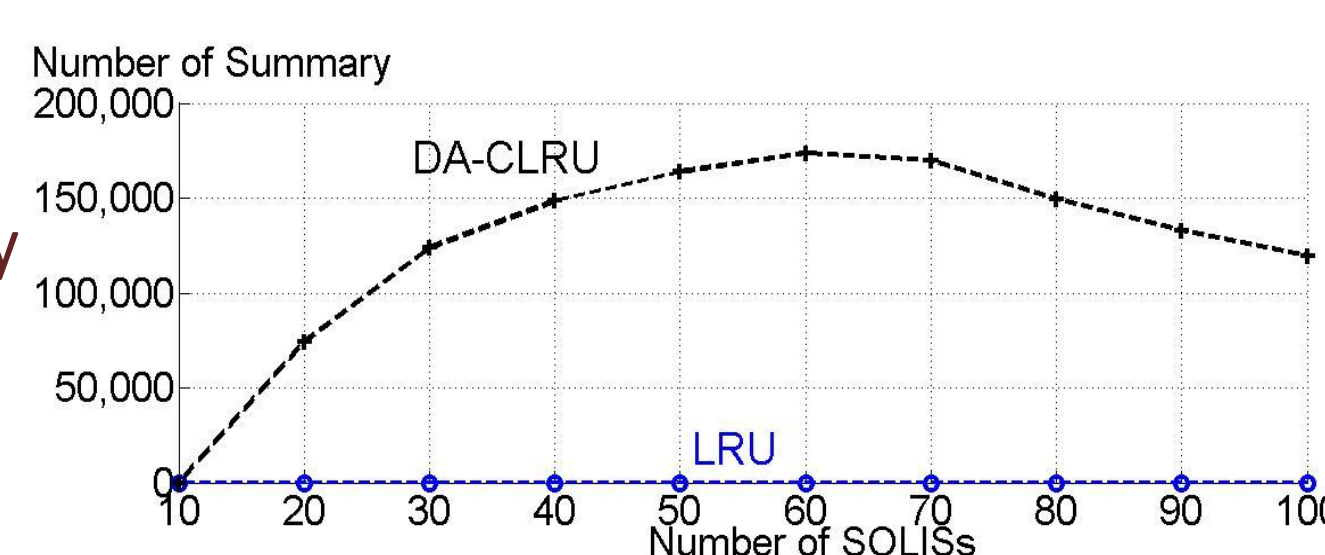
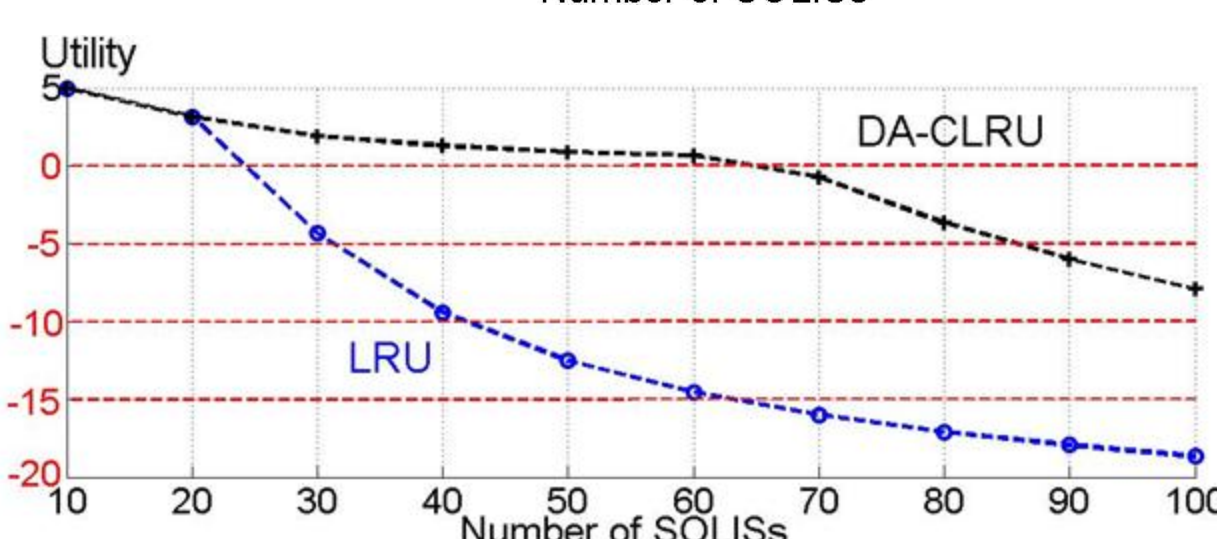


Figure 2: Utility of data with a negative value for data loss



Functionality

Main Functionalities:

- Social Streaming (SOLISs)
- Chase Display

Figure 1: SOLIS User Interface

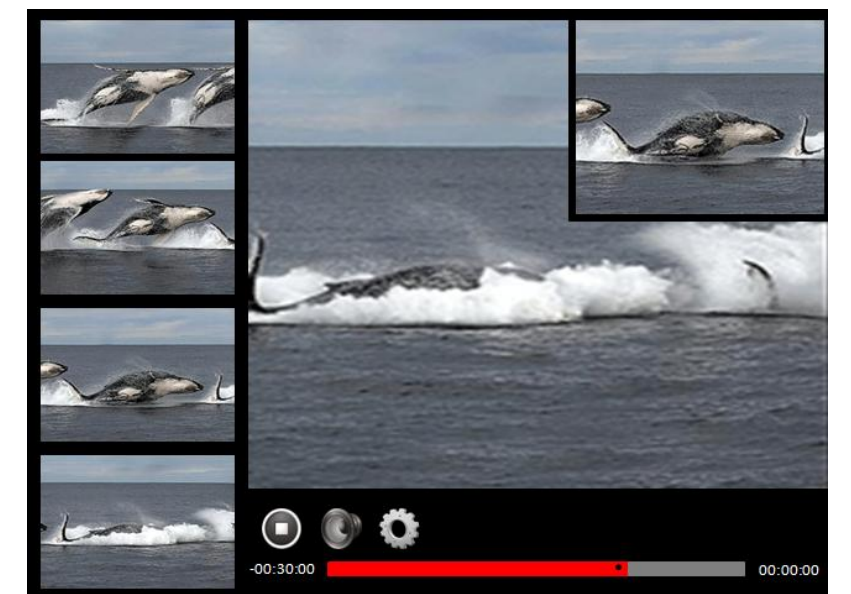
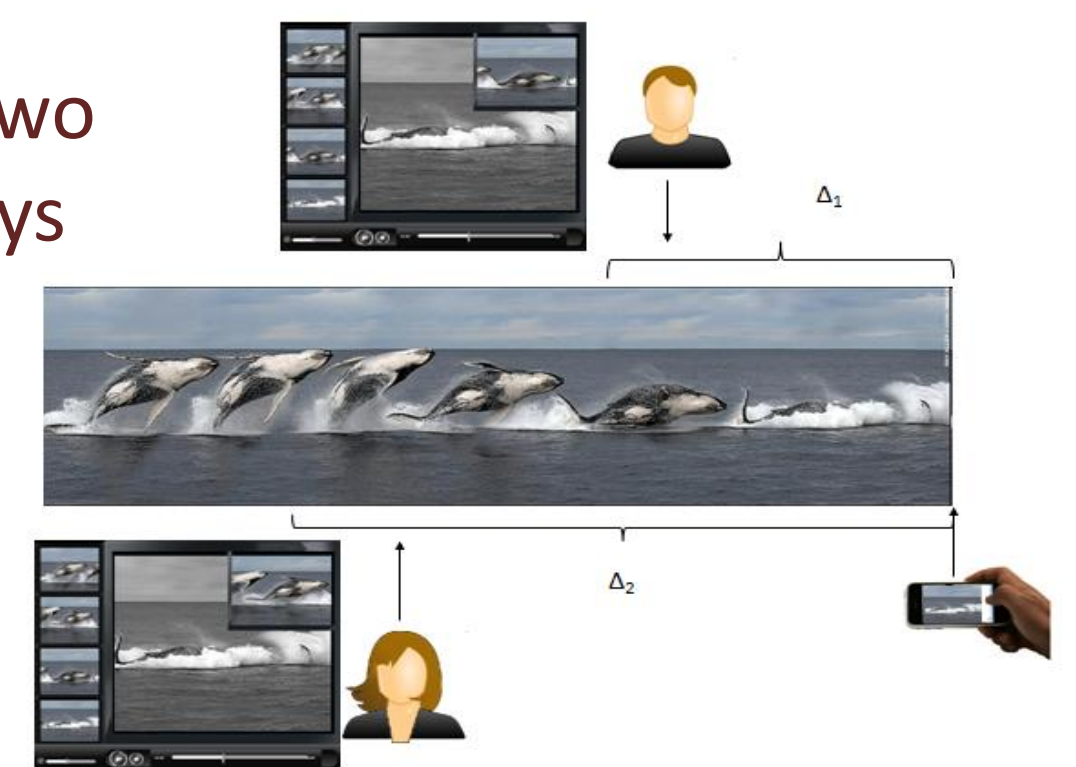
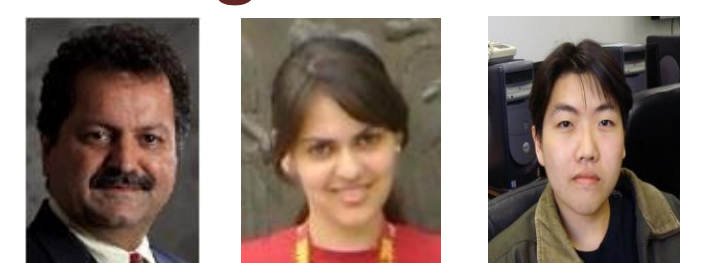


Figure 2: A SOLIS with two chase displays



Current Research

- Streaming Cache Manager
 - **Data Aware** replacement techniques for memory management
 - Maximize data utility by producing **summary** data
 - Admission Control Mechanisms for admitting SOLISs
- Streaming Cache manager in WAYS



References:

- 1) S. Barahmand, S. Ghandeharizadeh, "Chase Display of Social Live Streams (SOLISs)", Social Media Workshop, Colocated with ACM SIGMM 2011
- 2) S. Barahmand, S. Ghandeharizadeh, et al, "Three Highly Available Data Streaming Techniques and Their Tradeoffs", Advanced video streaming techniques for peer-to-peer Networks and Social Networking, Colocated with ACM Multimedia 2010