

CRA panel

Jack Breese

Director

Microsoft Research, Redmond, WA

Microsoft Research 2002

- Goal: pursue strategic technologies for MS
- Founded in 1991
- Staff of over 600 in over 40 areas
- Research lab locations :
 - Redmond, Washington (400)
 - San Francisco/Silicon Valley, California (20)
 - Cambridge, United Kingdom (80)
 - Beijing, People's Republic of China (110)

Microsoft Research Mission

- Research Excellence
 - Leadership in global research community
 - Keep apprised of trends/breakthroughs
 - Identify and recruit top talent
- Provide Technology to Microsoft
 - Create long term competitive advantage for Microsoft
 - Consultations, components, intellectual property, new businesses

Basic Research versus Product Impact

- Are they mutually exclusive?
- No, but they are a balancing act
- A good research project: a contribution to knowledge
- Product impact: create capabilities that are both compelling and difficult to replicate

Index Tuning Wizard

Index Tuning Wizard



Welcome to the Index Tuning Wizard

This wizard helps you to analyze your current indexes and recommends indexes to improve the performance of queries

Automated Selection of Materialized Views and Indexes for SQL Databases

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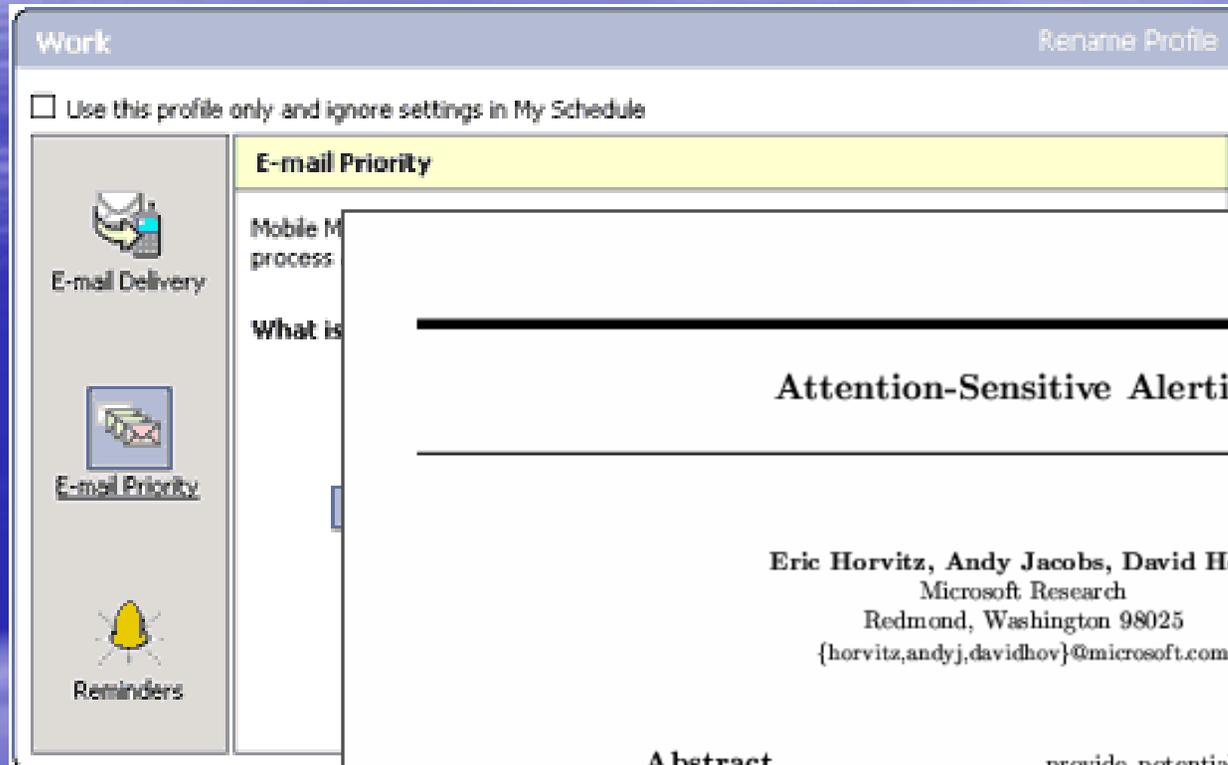
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Abstract
Automatically selecting an appropriate set of materialized views and indexes for SQL databases is a non-trivial task. A judicious choice must be cost-driven and influenced by the workload experienced by the system. Although large number of recent papers in this area, most of the prior work considers the problems of index selection and materialized view selection in isolation. Although indexes and materialized views are similar, a materialized view is much richer in structure than an index since a materialized view may be defined over

26th Conference on Very Large Databases, 2000

Priorities and Information Agent



Attention-Sensitive Alerting*

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Abstract

We introduce utility-directed procedures for mediating the flow of potentially distracting alerts and communications to computer

provide potentially useful context-sensitive information and analysis (Breese, Heckerman, & Kadie, 1998; Czerwinski, Dumais, & Robertson et al.; Leiberan, 1995; Horvitz, Breese, Heckerman et al., 1998; Horvitz, 1999). Indeed, novel sources of information, as well as

Uncertainty in Artificial Intelligence, 1999

Windows Media

Windows Media Player

File View Play Tools Help

Gold Disc 1

Ryan Adams
New York, New York

New York, New York 3:47
Firecracker 2:51

Ambience: Water

Artist: Ryan Adams

PRESENTED AT IEEE ICASSP'99 – PHOENIX, AZ, MARCH 1999

A MODULATED COMPLEX LAPPED TRANSFORM AND ITS APPLICATIONS TO AUDIO PROCESSING

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ABSTRACT

This paper introduces a new structure for a modulated complex lapped transform (MCLT), which is a complex extension of the modulated lapped transform (MLT). The MCLT is a particular kind of a 2x oversampled generalized DFT filter bank, whose real part corresponds to the MLT. That property can be used for efficient implementation of joint echo cancellation, noise reduction, and coding, for example. Fast algorithms for the MCLT are presented, as well as examples that show the good performance

$$\begin{aligned} p_1(n, k) &= h_1(n) \sqrt{\frac{2}{M}} \cos \left[\left(n + \frac{M+1}{2} \right) \left(k + \frac{1}{2} \right) \frac{\pi}{M} \right] \\ p_2(n, k) &= h_2(n) \sqrt{\frac{2}{M}} \cos \left[\left(n + \frac{M+1}{2} \right) \left(k + \frac{1}{2} \right) \frac{\pi}{M} \right] \end{aligned} \quad (1)$$

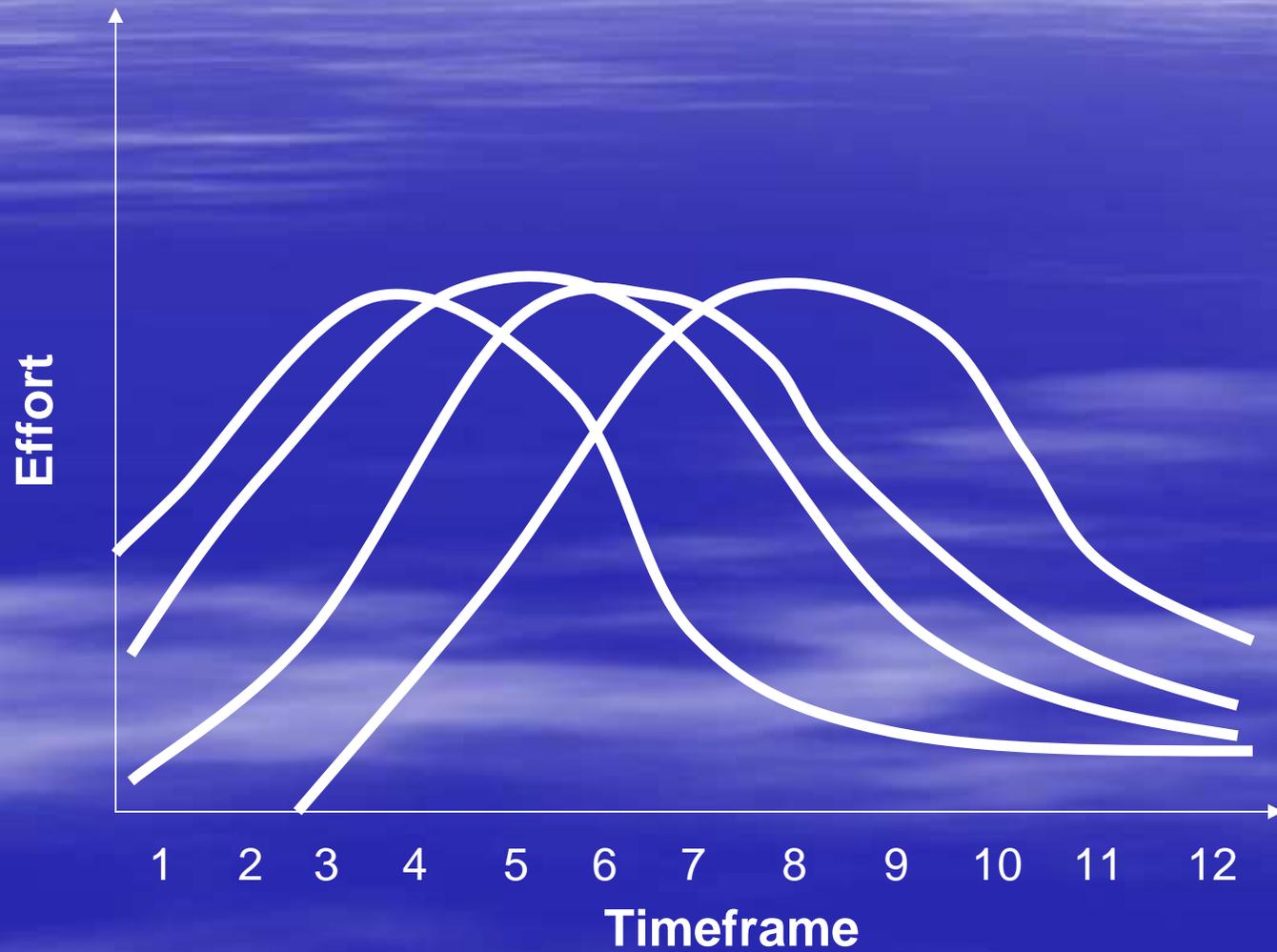
where $p_1(n, k)$ and $p_2(n, k)$ are the basis functions for the direct (analysis) and inverse (synthesis) transforms, and $h_1(n)$ and $h_2(n)$ are the analysis and synthesis windows, respectively. The

IEEE ICASSP, 1999

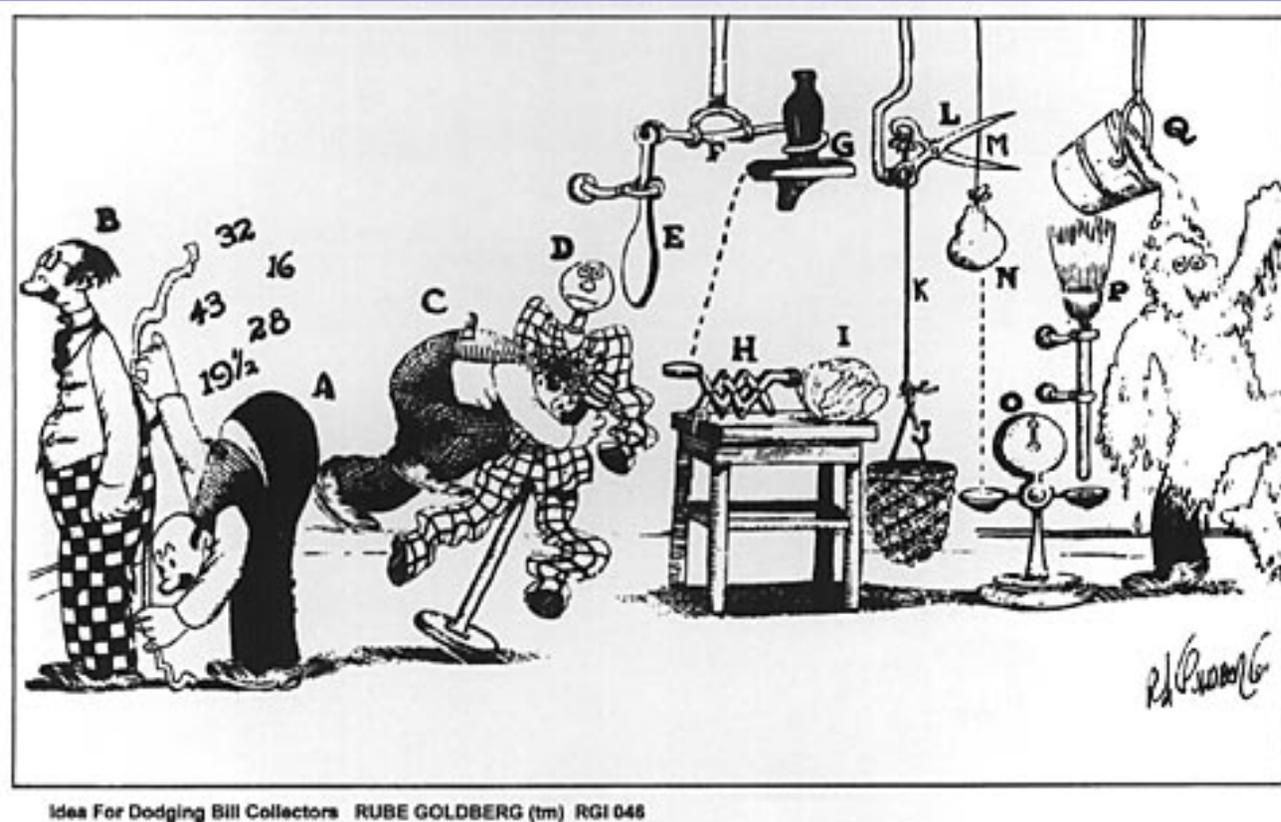
Tactics

- Recruiting: Hire the best people who also want to have an impact
- Cost sharing: management attention is a critical resource
- Recognize contributions: compensation, promotions, ship-its
- Team building: Theorists and software development engineers are critical team members.

Manage the portfolio



Tech Transfer is not...



It is a *fundamentally social long term partnership* for developing key technology assets

Dynamics of Tech Transfer

