Open Source
A Strategic Tool for Improving Global Health Care

Geneva, December 2003

Joseph Dal Molin

Open Source Health Care Alliance

OSHCA

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Traditional Software Development Models Have Not Been Effective in Health Care

- Medical software is too expensive
- It is difficult to share medical information
- It is difficult to measure effectiveness of health policies and investments in information technology
- Much re-inventing of the wheel even though the basic requirements health care are essentially the same everywhere

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It Is Time for a New Paradigm

"The significant problems we face cannot be solved at the same level of thinking we were at when we created them."

Albert Einstein

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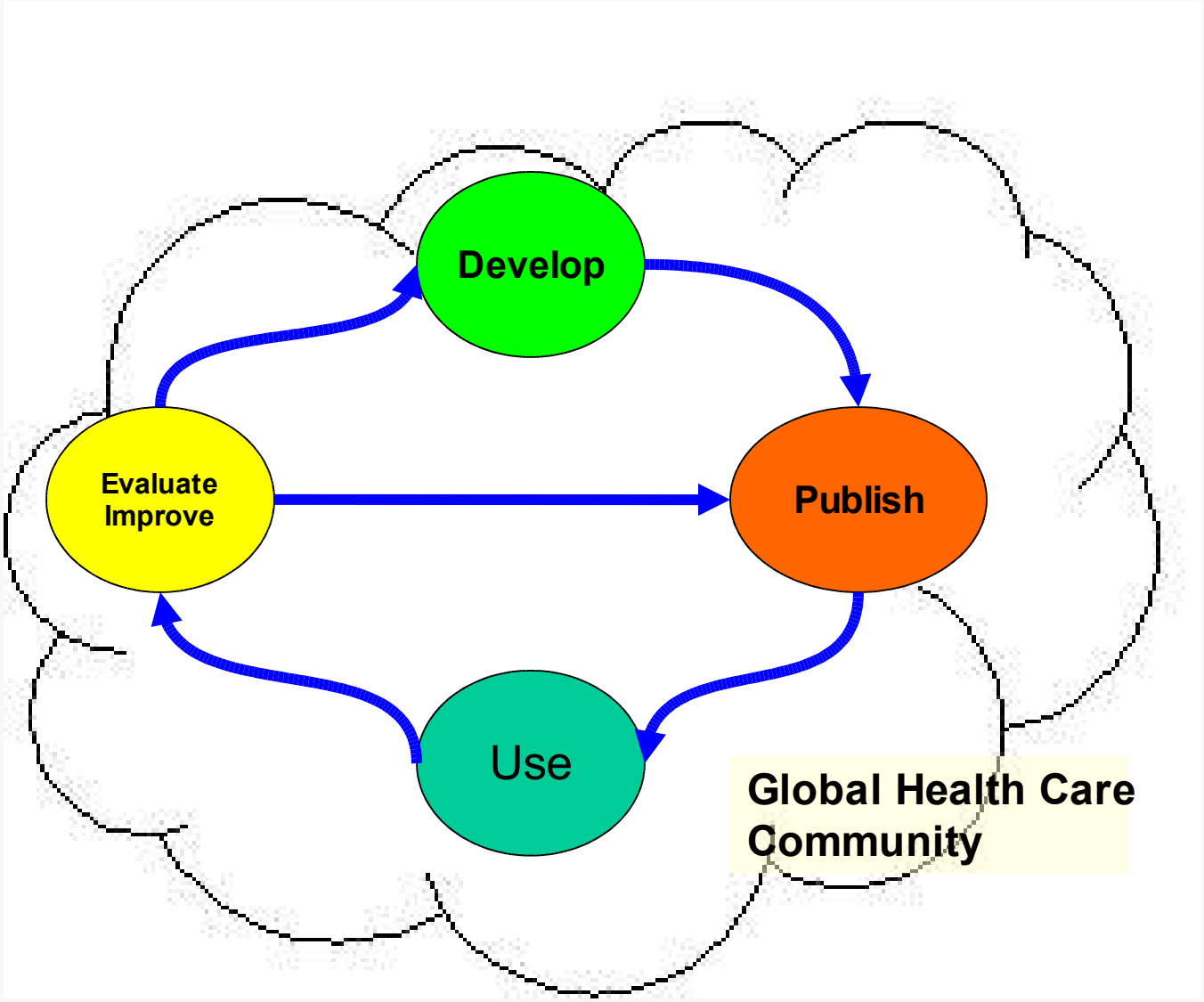
The Open Source Cycle



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What is OpenSource / Software Libre

- Software source code is freely available
- Any party can sell or give away copies
- Derived works can or must be distributed under same terms
- Anyone can participate
- Can establish a virtuous spiral of improvement

"evidence driven software evolution"

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OSHCA: The Open Source Healthcare Alliance

- Established in November 1999
- 100+ members
- In process of incorporating as a not for profit (NGO)

Meetings and Sponsors

- June 2000, Rome, Inaugural meeting Rome, FAO
- Sept 2001, London, UK National Health Service IA
- Nov. 2002, Los Angeles, UCLA
- Dec 2003, Geneva, University Hospital of Geneva

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Why was OSHCA created?

Priming the Virtuous Spiral

- Create a core group of collaborators
- Identify “seed” project(s)
- Gather together a “global” community
- Provide meeting place and “workshop”
- Build just enough
- Get out of the way

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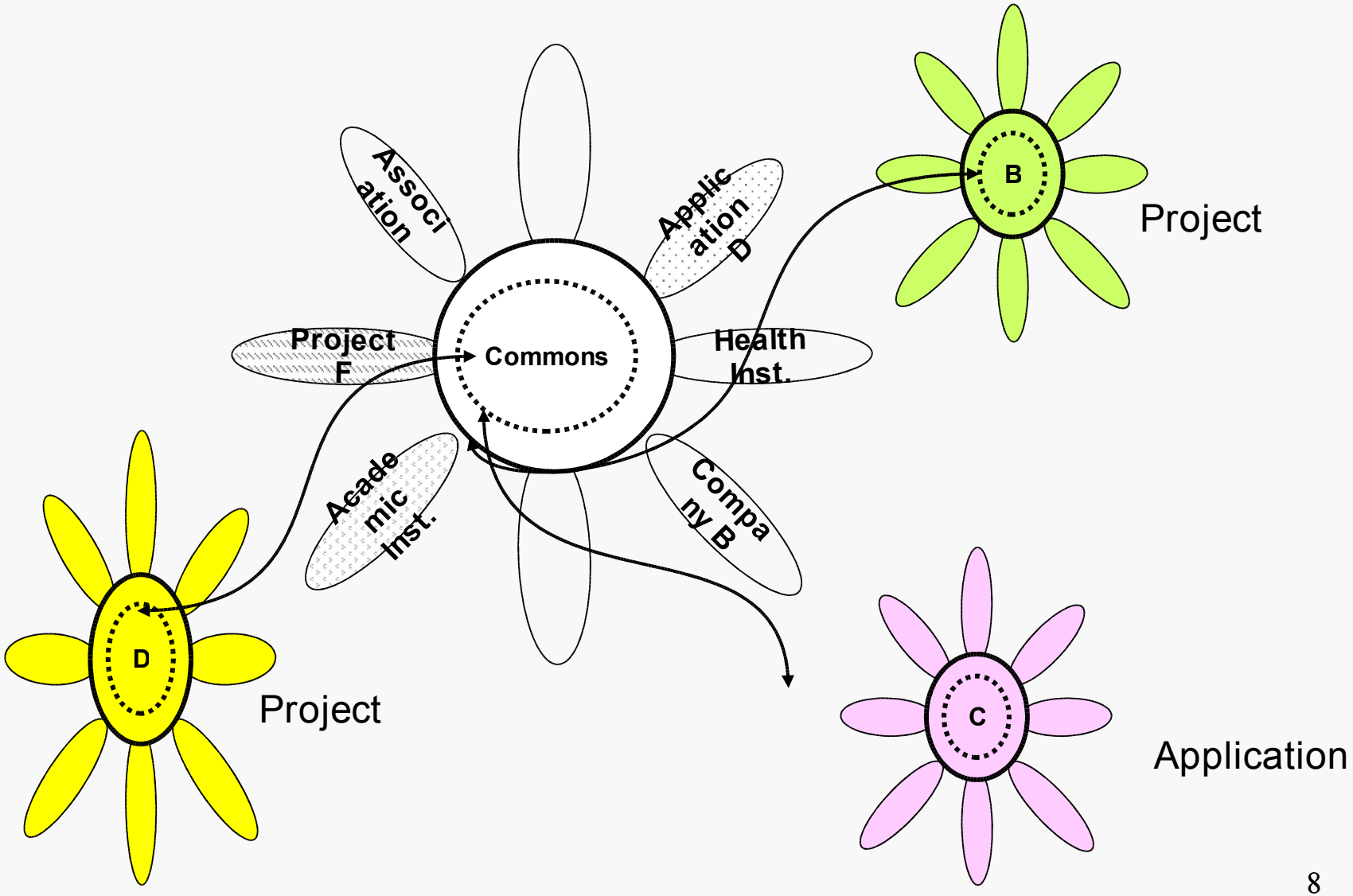
An evolving ecosystem of communities



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Mature Open Source Systems for Health Care Exist Today - Some Examples

- openVistA
  - WorldVistA, www.worldvista.org
- OSCAR
  - McMaster University Department of Family Medicine,
- TORCH
  - Open Paradigm, www.openparadigms.com

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openVistA

A complete, fully integrated hospital information system based on the U.S. Veteran's Hospital VistA system

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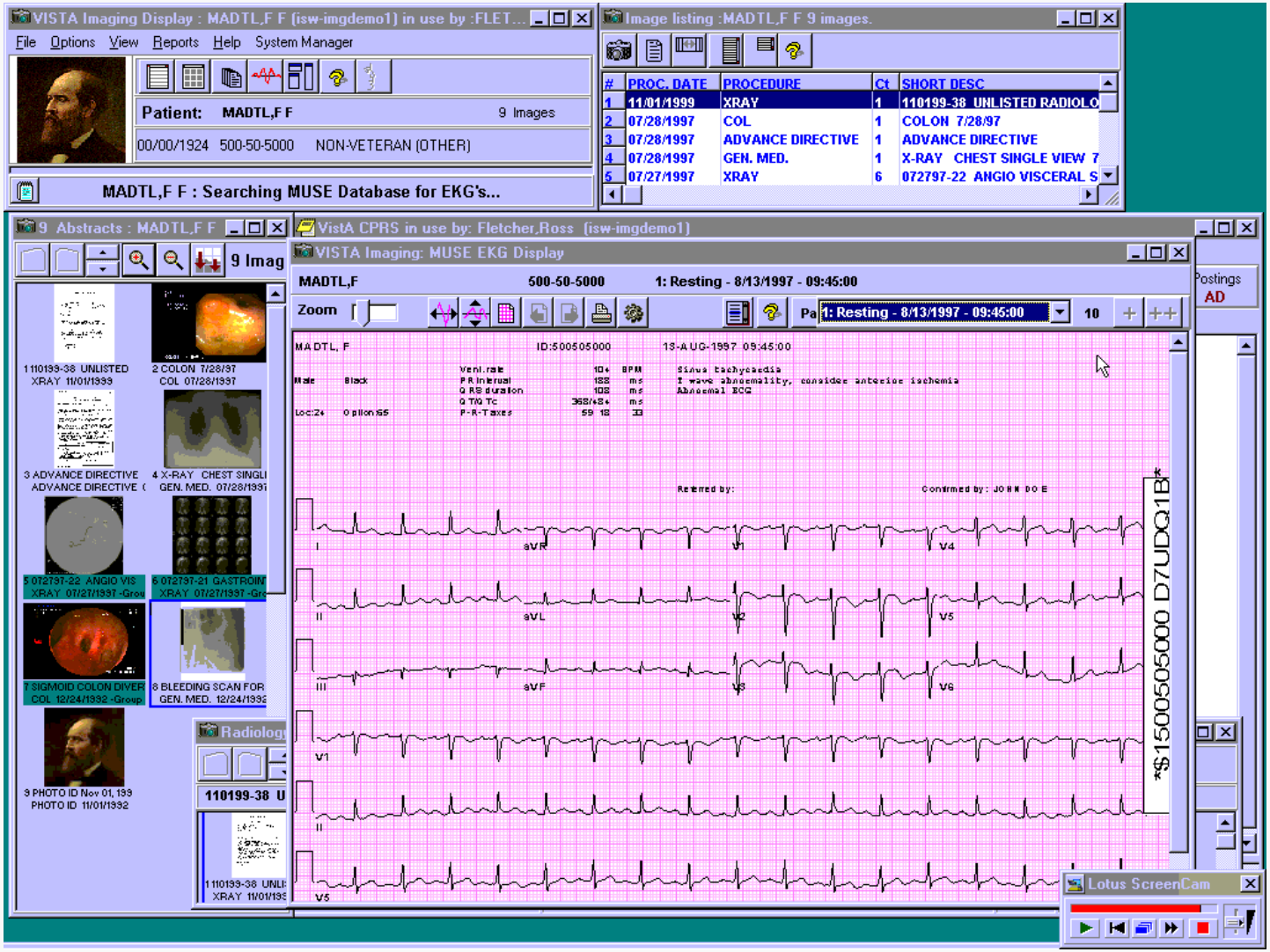
openVISTA



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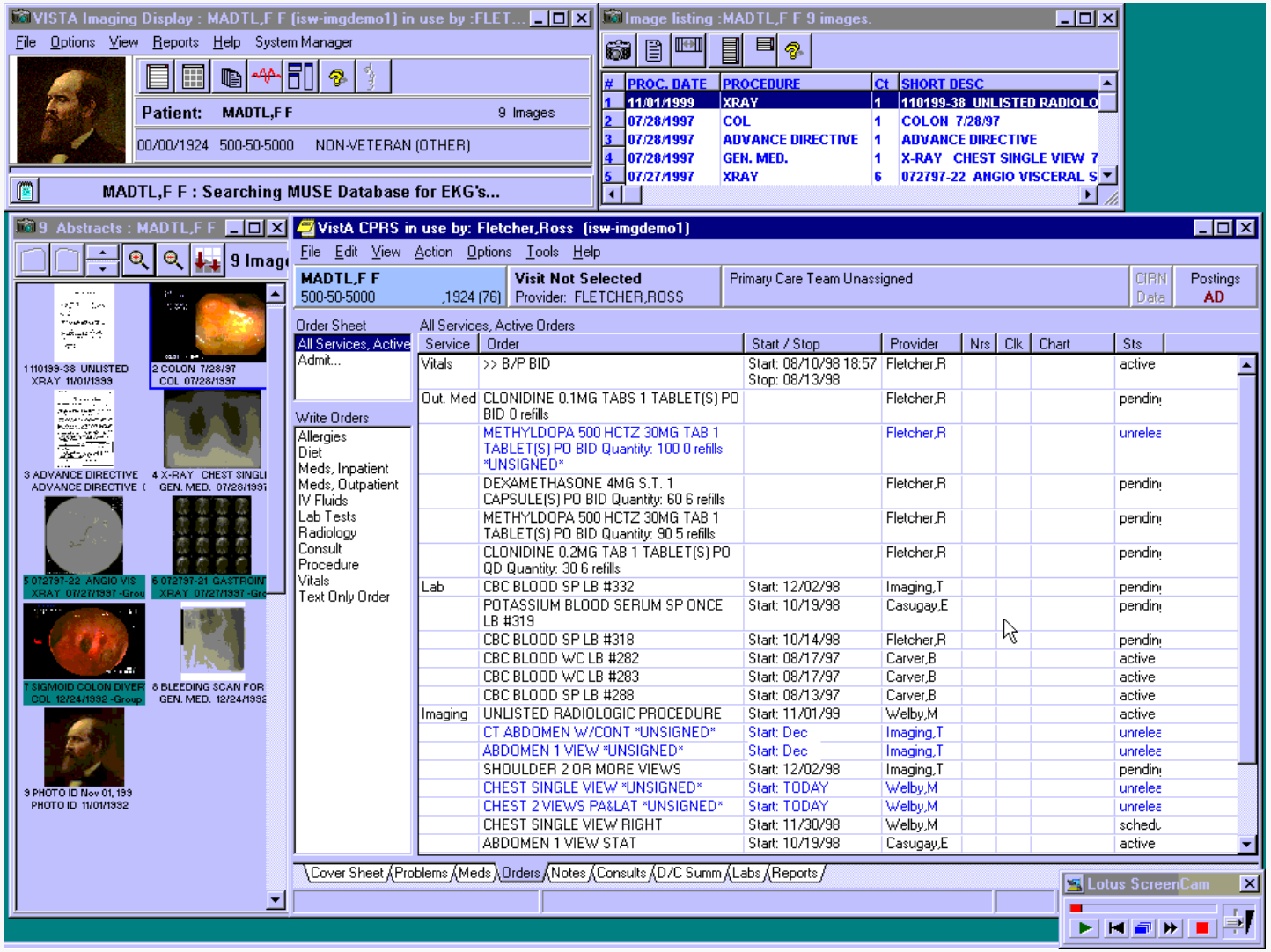
openVISTA



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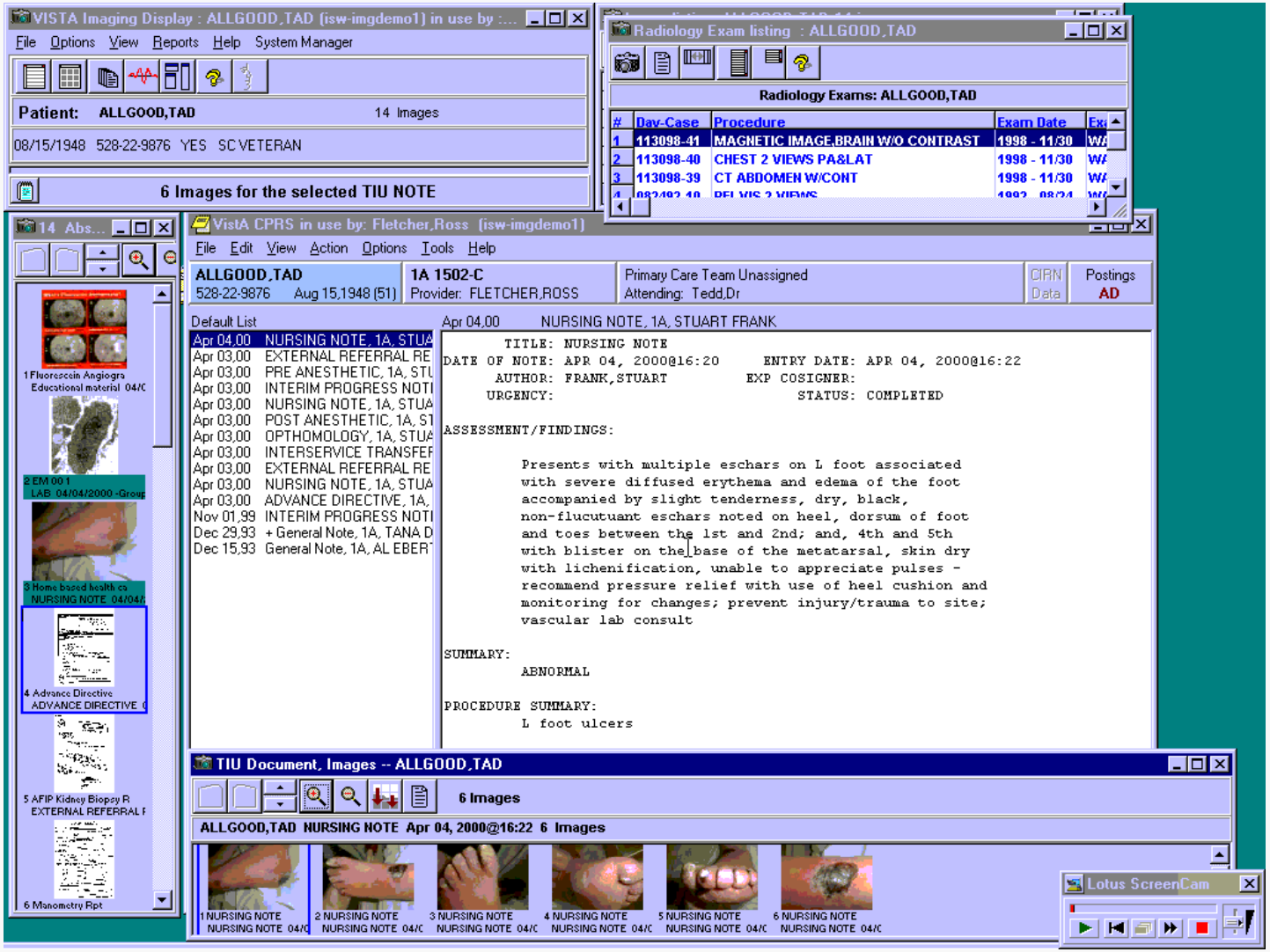

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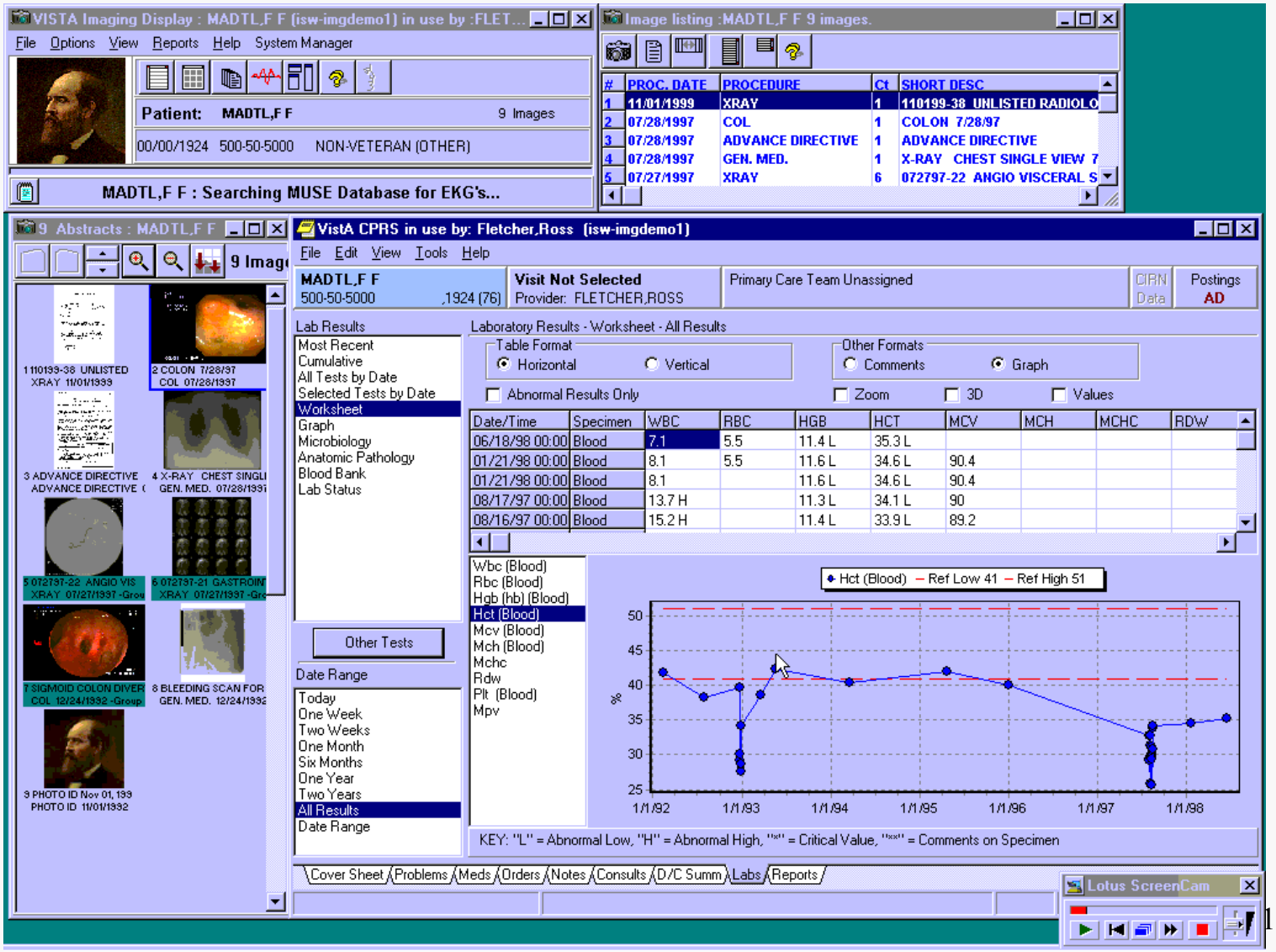

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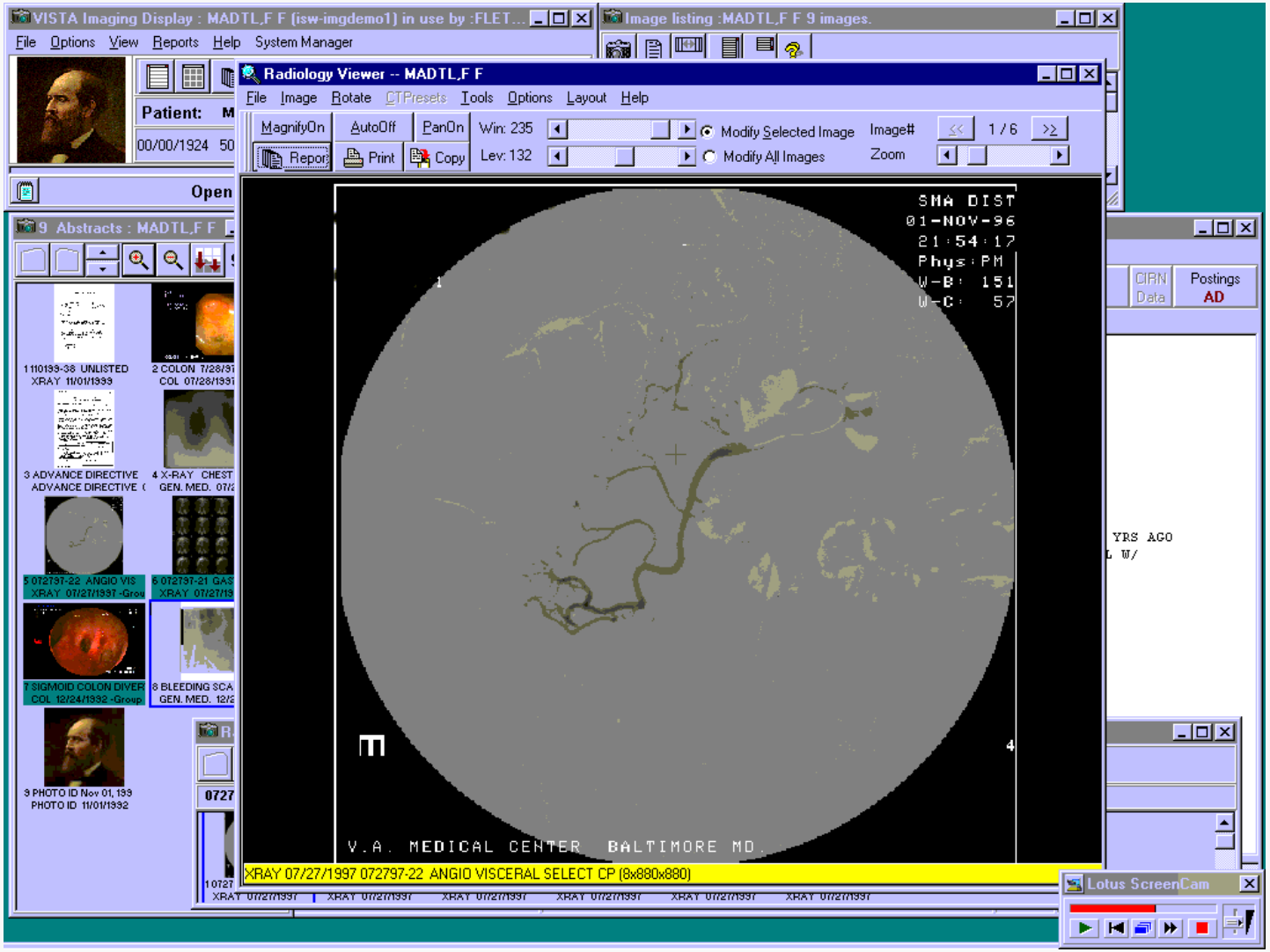

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openVISTA

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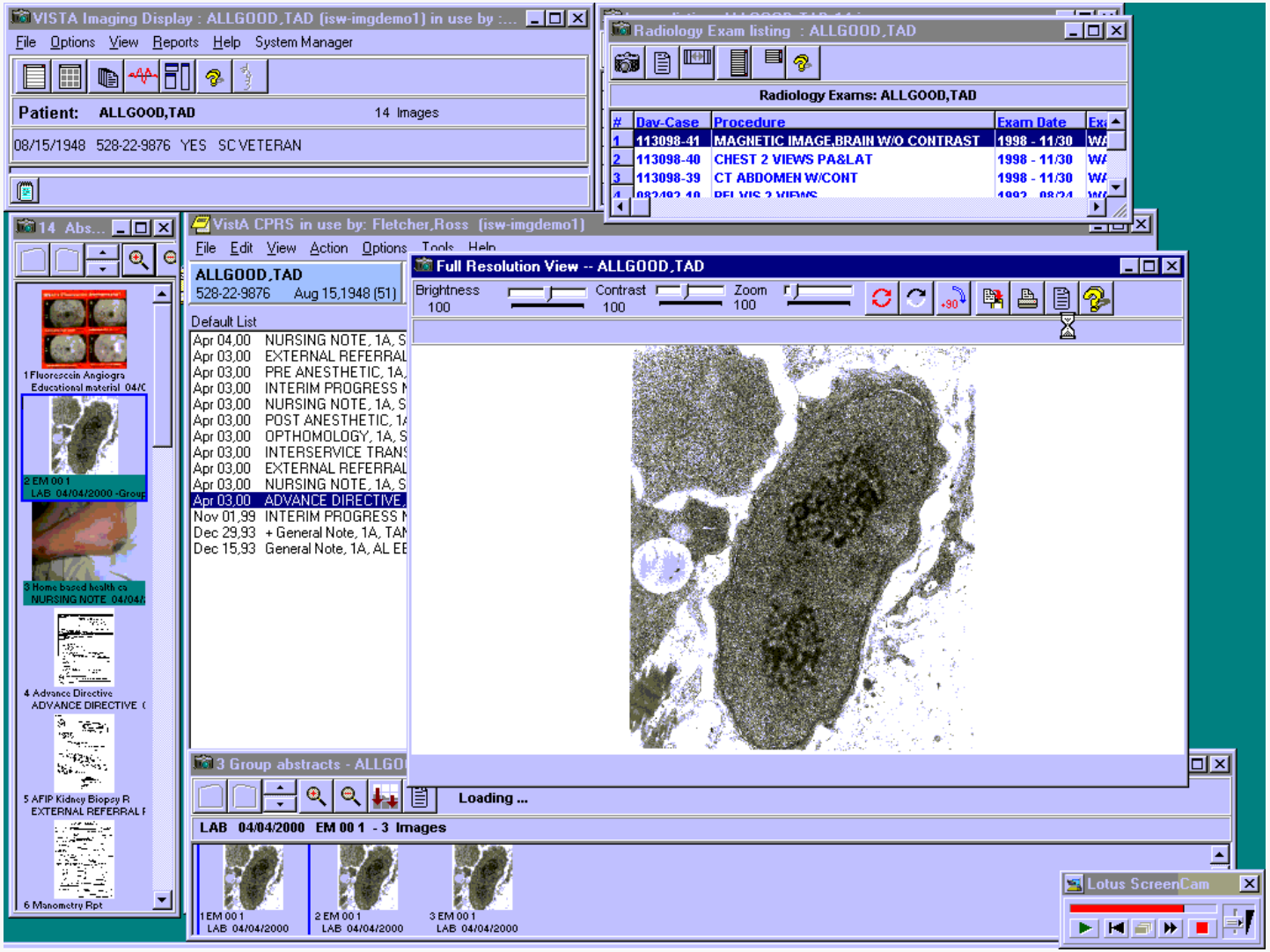

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TORCH

Trusted **O**pen source **R**ecords for **C**are & **H**ealth

- TORCH's unique approach to the electronic health record problem is defined by viewing it as a content management problem.
- Interoperability with other applications is addressed through the ability to rapidly build custom interfaces to any system.

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TORCH

Trusted **O**pen source **R**ecords for **C**are & **H**ealth

- TORCH fully leverages the open source philosophy by building on tried and tested open source applications.
- This gives the effect of many more developers and many more installations for a large part of TORCH's components.
- This significantly reduces the amount of effort required to maintain TORCH.

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TORCH

Trusted Open source Records for Care & Health

- Screen layouts are easily customized via standard HTML editors.
- Reporting can be performed with custom Python scripts and/or SQL.
- Custom components can be added via Archetype declarations and built-in widgets provide viewing, editing and i18n support.

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OSCAR

An electronic health record and practice management system for primary care and community based care.
Developed by the Department of Family Medicine
McMaster University, Hamilton Ontario

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What is OSCAR?

- OSCAR is a set of Clinic Applications, Clinic Resources, and electronic patient records, developed using Open Source tools (Linux, Tomcat, MySQL, Zope)
- OSCAR facilitates Clinical Decision Support and Evidence Based Medicine
- OSCAR provides tools for clinic operations (appointments, encounters, prescriptions, lab results, roster, billing, electronic patient record)
- OSCAR is web based, to provide offsite access
- This work is funded by a grant from the Ministry of Health of Ontario, to support the requirements of Primary Care Reform

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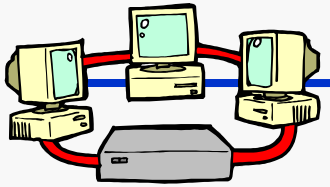

Typical OSCAR Clinic Set-up

OSCAR Web Server

Linux

Tomcat

MySQL

OSCAR billing

PC or Mac

Web Services

OSCAR Home
OSCAR Resource
OSCAR ASP/Redirect
OSCAR Comm
OSCAR Fax
OSCAR Citizens
OSCAR Backup

router

ADSL/Cable Internet Access with Dynamic IP address

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Current OSCAR Users

- Maternity Center of Hamilton (10 Doctors)
- Joint PCN On-call group (18 Doctors & 35 Residents)
- Hamilton Midwives (7 midwives)
- Wellington Nursing Home (2 Doctors)
- Stonechurch Family Health Centre (28 Doctors & Residents)
- McMaster Family Practice (24 Doctors & Residents)
- Solo Obstetrics Specialist
- Hamilton Stroke Prevention Clinic
- Known installations in Toronto, Vancouver, US cities, Australia, Columbia, Brazil, and South Africa

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Development Plans

- Clinical Applications:
  - Phase I - Office Management
  - Phase II - EMR
  - Phase III - Research & Evaluation
  - Phase IV - Citizen Interactive
- Clinical Resource
  - resource database
  - recruitment of content experts
  - Evidence Based decision support tools
- Open Source
  - copyright & licensing
  - software release: Hollywood November 17, 2002

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EMBERTON - Microsoft Internet Explorer

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Back Search Favorites Media

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LOGIN

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PIN: for Internet users

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PEMBERTON HEALTH CENTRE, BC

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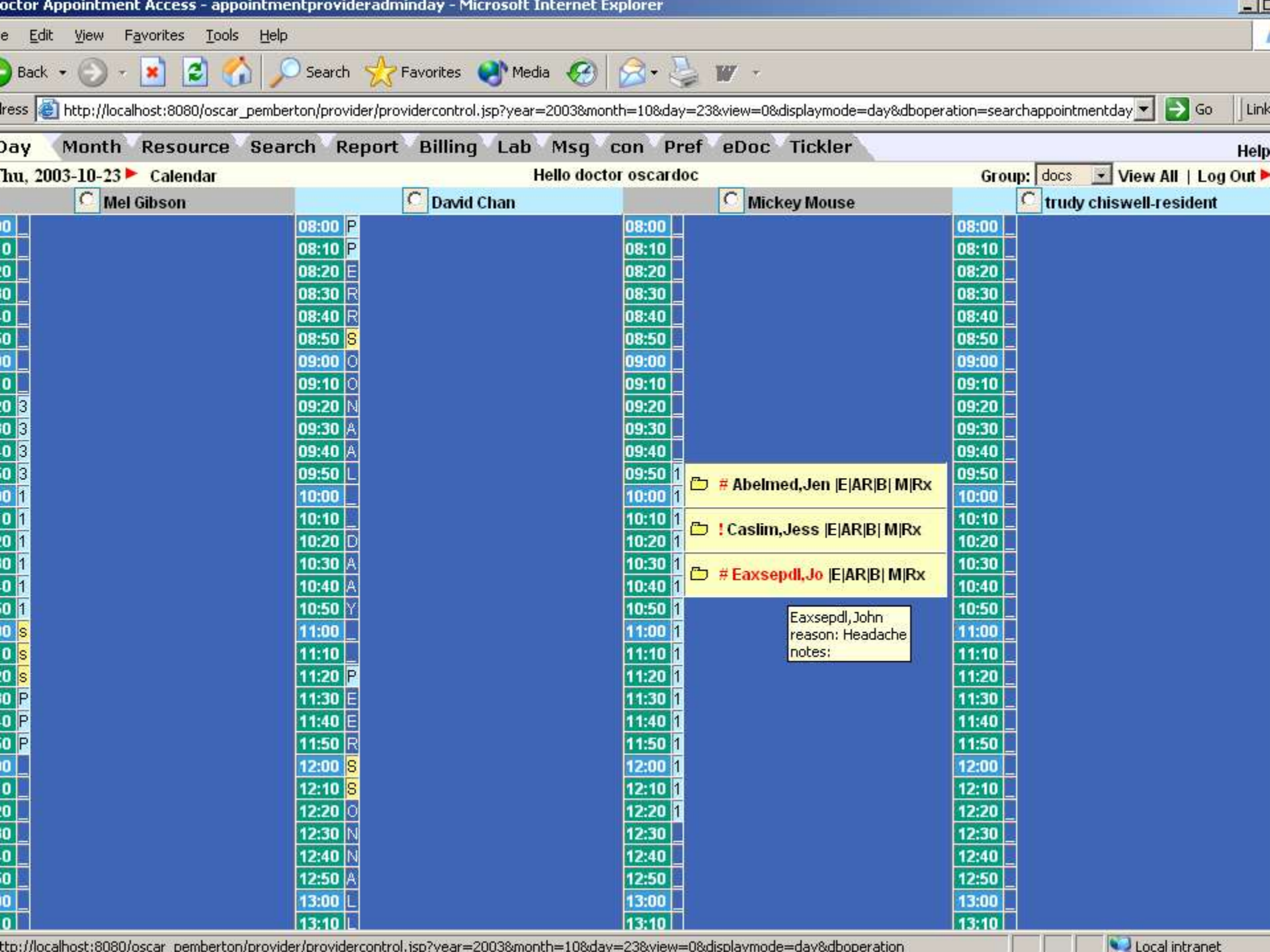
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Eaxsepdl,Jo |E|AR|B| M|Rx
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reason: Headache
notes:
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Local intranet

Concluding Comments
“Open Source Is A Natural Fit for Health Care”

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Driven More by Economics Than Altruism

- Market forces drive price to the marginal cost of production

  C. Shapiro and H. Varian, Information Rules, Harvard Business School Press, 1999
- The cost of producing a second copy of software is close to Zero
- The network effect of the internet accelerates this trend

Open Source is the next step in software business models

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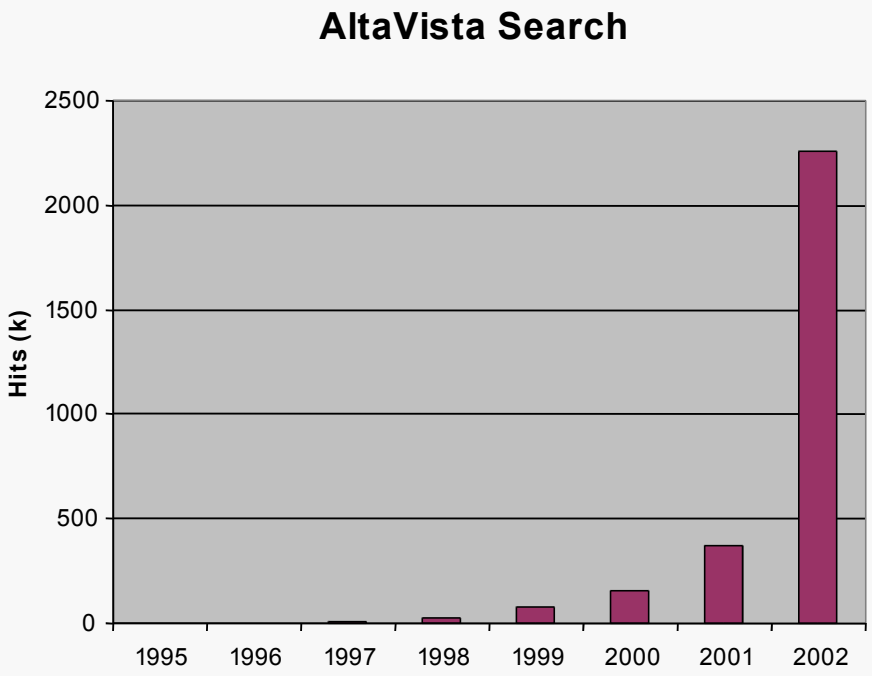
Trends

- Most indicators are growing exponentially
- No limits to growth discovered to date



Search on ((open source software) or oss)

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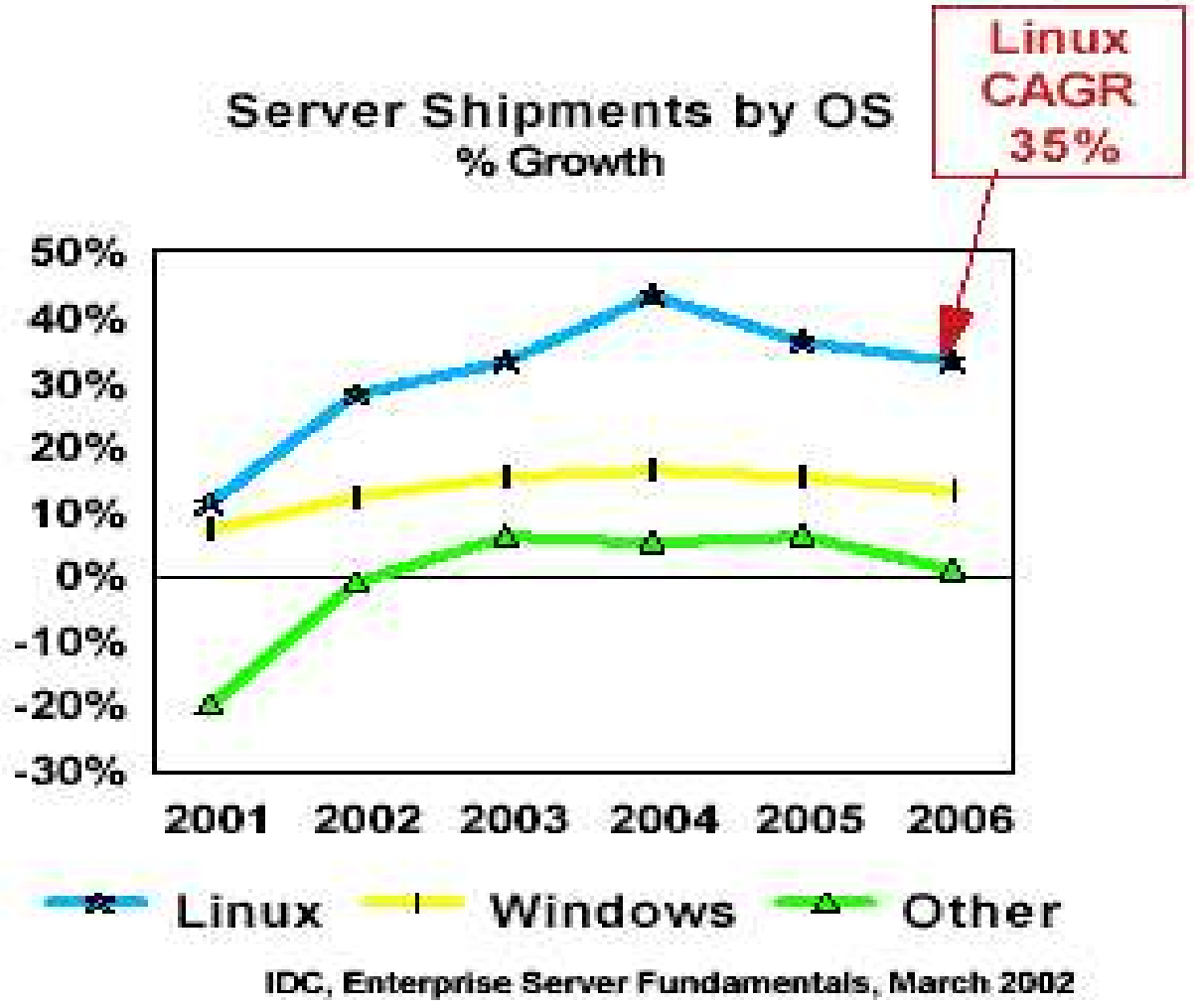
Trends



IDC, Enterprise Server Fundamentals, March 2002

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Trends: Government Adoption Increasing

As of June 2003, over 70 policy proposals, positions or actual government decisions have been made concerning open source software (OSS) in some 24 countries around the world.

- Countries are using OSS as a strategic tool to overcome legal and economic barriers of proprietary software.
- City of Munich > Linux/OpenOffice > “14,000 PC systems and Notebooks, over 16,000 users
- Beijing municipal government
- Japan to use Linux to manage salary and other personnel data for the nation's 800,000 central government employees
- Korea migrating 120,000 civil servants, 23% of its installed Microsoft systems, to the Korean Linux distribution
- Bioniformatics 80-95% open source - SARS genome sequencing done on Linux cluster

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Open Source: A Natural Fit for International Collaboration in Health and Other Sectors

- Fewer to no Intellectual Property issues
- Cumulative Innovation - leverages investment of the global community
- You can start small
- You can reuse what you and others already have developed
- Naturally leads to standardization
- Can focus on clinical outcomes
- Directly addresses “Digital Divide” issues

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www.oshca.net

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