

e-business tools
Opportunities at CERN

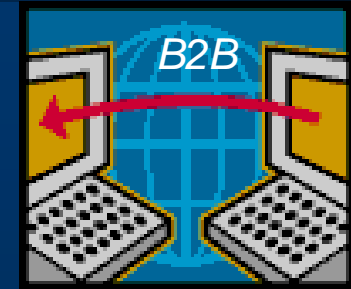
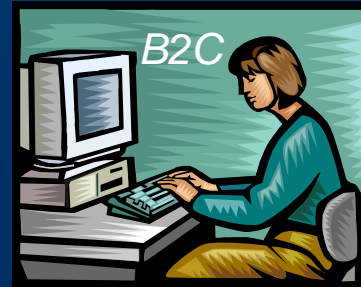
James Purvis

IT Department
CERN – Geneva, Switzerland

e-business vs e-commerce

- **e-commerce**

- outward-facing
- sales, marketing, customer service...
- revenue generating focus



- **e-business**

- internal processes (more complex)
- procurement, finance, hr, safety
- cost savings, improvements in efficiency & productivity



CERN

World's leading particle physics research laboratory

- Annual budget of €600 million
- 2600 Staff
- 6500 visiting scientists
- Inventors of the World Wide Web
- Half the world's particle physicists researching matter and forces



Challenge facing CERN today

Build the worlds largest scientific instrument...

Budget

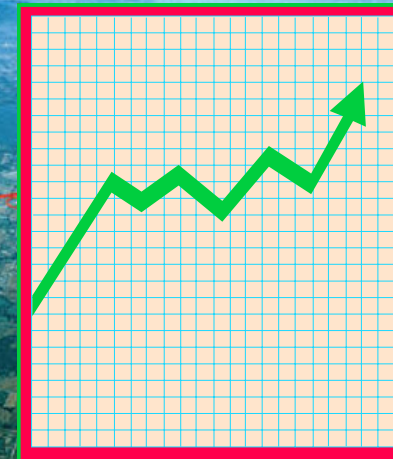


With less budget..

Staff



fewer staff...



for more scientists...
with higher
expectations...

Internal processes

The image shows a collage of several CERN internal forms. The most prominent one is a 'DEMANDE DE CONGE/LEAVE REQUEST' form for De Jonghe JÜRGEN, with a total entitlement of 40 1/2 days. It lists several leave periods: 24/11/95 to 24/11/95 (1 day), 8/1/95 to 8/1/95 (1 day), 15/2 to 15/2 (1 day), and 09/19 A to 99/19 (1 day). Other forms visible include 'HOME LEAVE', 'DEMANDE DE REMBOURSEMENT FRAIS SCOLAIRES', and 'TRANSACTION INTER-DIVISIONNAIRE'.

| De/From Dates inclusives Inclusive dates | A/To | Jours ouv. working days | Adresse et no. téléphonique Address and telephone no. | Signature | Date | Autorisé Authorised | Solde C. annuel Balance annual I. |
|--|----------|----------------------------------|--|-----------|---------|------------------------|--|
| 24/11/95 | 24/11/95 | 1 | | | | | 40 1/2 |
| 8/1/95 | 8/1/95 | 1 | | | 21/1/96 | | 40 1/2 |
| 15/2 | 15/2 | 1 | | | | | 39 1/2 |
| 09/19 A | 99/19 | 1 | | | | | 39 |

- Over 100 official procedures
- Used by all CERN personnel
- Over 250,000 documents per year
- Examples:
 - purchase orders
 - training request
 - holiday request
 - travel claim

Goal :
Enable employees to reduce overhead activities, increase efficiency and focus on core activities

Progress



1954  2004

CERN - fifty years of progress



Workflow in Action



Workflow in Action

Material Request - Netscape

File Edit View Go Communicator Help

Bookmarks Netsite: <https://edh.cern.ch/Document/MAG>

Material Request Clone Pr.View Catalog Delay? Lines Save Send Help

Fields with asterisks (*) are obligatory and must be filled in.

General Description: ?

Requestor *: ?

Delivery Location *: ?

Requested Delivery Date: ?

Delivery Comments: ?

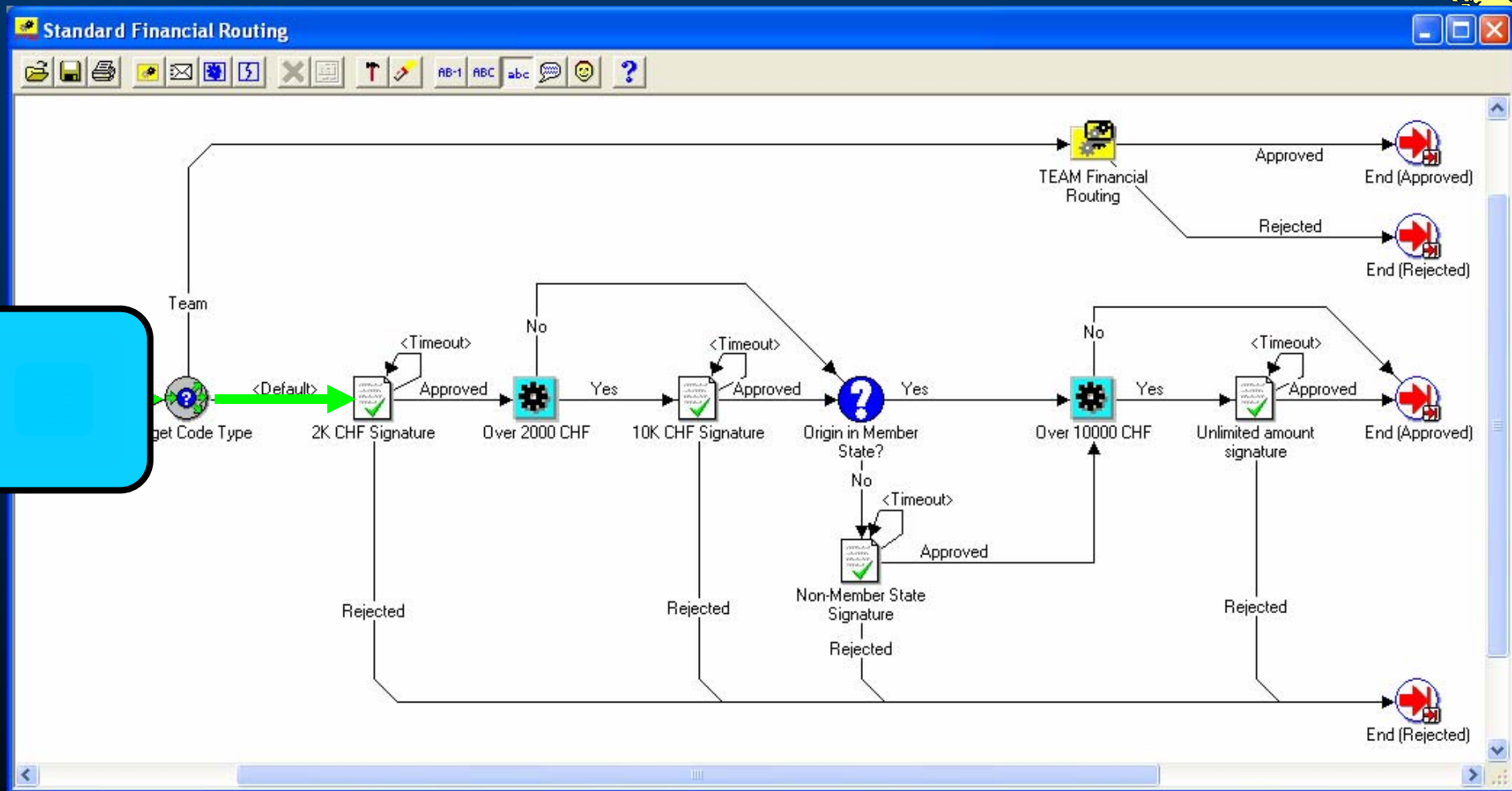
Budget Code *: ? **Total: SFr. 398.00**

| Pos | Qty ? | Unit | SCEM ? | Comments | Subtotal |
|-----|--------------------------------|------|---|--|---------------------------|
| 1 | <input type="text" value="1"/> | pc | <input type="text" value="59.70.20.410.0"/> | <input type="text" value="ARGON P.+GIFT REGUL.300bar/16l"/> Item in stock, you will be served within 1 working day. | 214.00 |
| 2 | <input type="text" value="1"/> | pc | <input type="text" value="59.70.50.220.9"/> | <input type="text" value="ST.OXYGEN REGULATOR 300/20 bar"/> Item in stock, you will be served within 1 working day. | 184.00 |
| | | | | | Total: SFr. 398.00 |

Document: Done



Workflow in Action



Workflow in Action

Material Request 769838 - Netscape

Authorise Document - Netscape

Authorise Document
769838

Please enter your authorisation password:

Authorisation Password : ***** OK

Routing Comments:

Forward (optional)

Forward to:

+ Add
X Delete

If absent, delegate to:

+ Add
X Delete

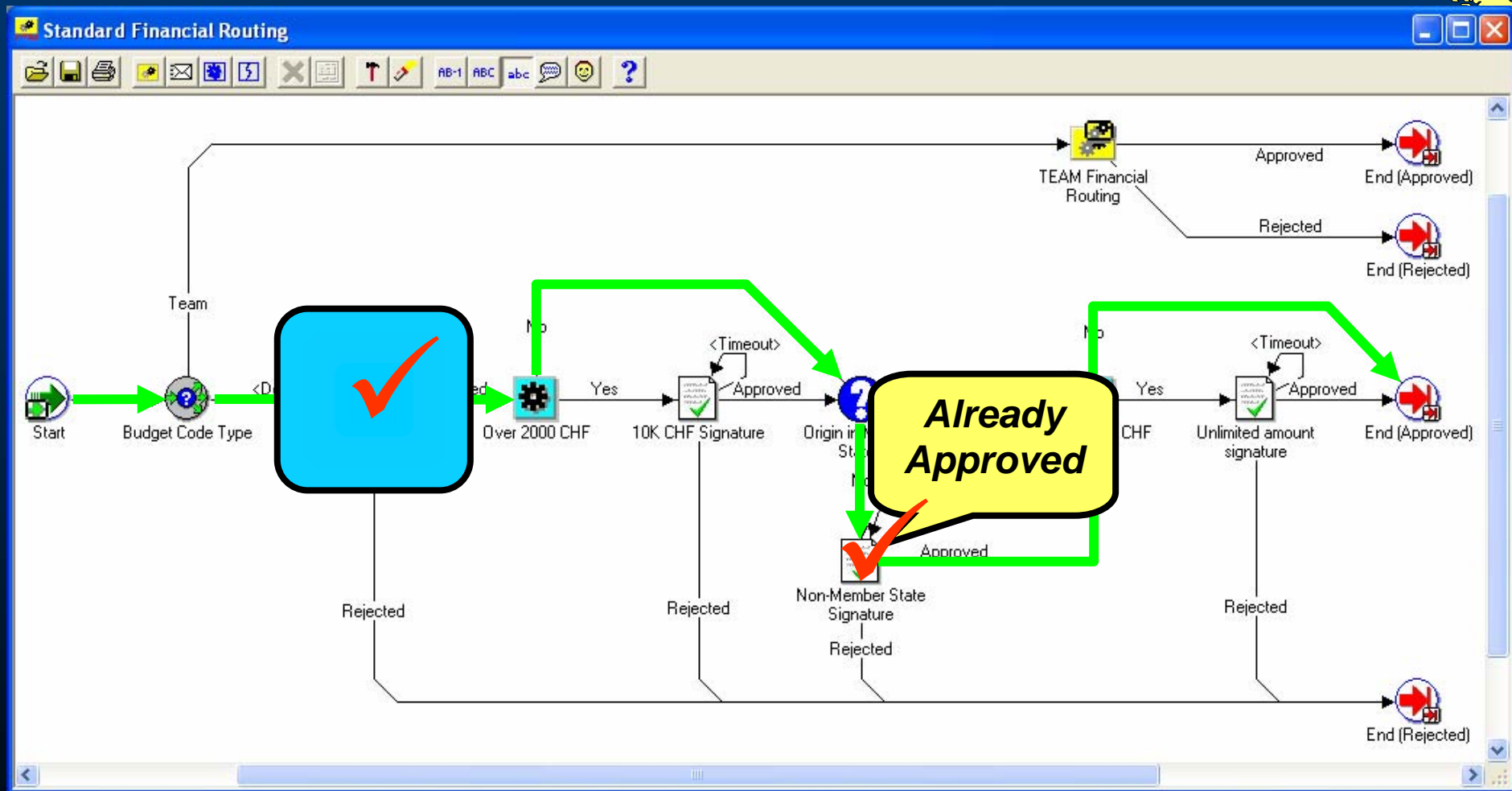
Forward for information only
 Forward in Parallel
 Re-sign after these approvals

22.06.2000 12:39 Susan FOFFANO is absent from 20.06.2000 until 26.06.2000
22.06.2000 12:39 With Ivica Dobrovicova for 500 CHF signature on 16152 awaiting approval

Document: Done



Workflow in Action



Workflow in Action



Almost any procedure...

'CERN'
perso
activ
overhe

EDH - Tasks (James PURVIS) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <https://edh.cern.ch/Desktop/dir.jsp?-4>

Google Search Web 37 blocked AutoFill Options

EDH Welcome James PURVIS, click here to [LOGOUT](#)

Home Search News Settings About Help

Administration

- [EDH Admin](#)
- [LeaveAdmin](#)
- [Reroute Document](#)

Claims

- [Advance](#)
- [Home Leave\(all\)](#)
- [Installation](#)
- [School Fees](#)
- [Subsistence](#)
- [Sundry Expenditure](#)
- [Third Party Claim](#)

HR & Training

- [External Training Request](#)
- [PAF Summary](#)
- [Request for opening a post](#)
- [Training Catalogue](#)

Leave

- [Leave Cancellation](#)
- [Leave Overview](#)
- [Leave Request](#)
- [Leave Transactions](#)
- [List of Leaves](#)
- [Overtime Request](#)
- [Overtime Summary](#)
- [Personal Schedule](#)

Logistics

- [Snipping Request \(Arrival\)](#)
- [Shipping Request \(Expectation\)](#)
- [Transport Request \(CERN site\)](#)

Other Services

- [Access Request](#)
- [Automatic Callback / CCQ Request / Modification](#)
- [CERN Disruption Request / Modification](#)

Purchasing

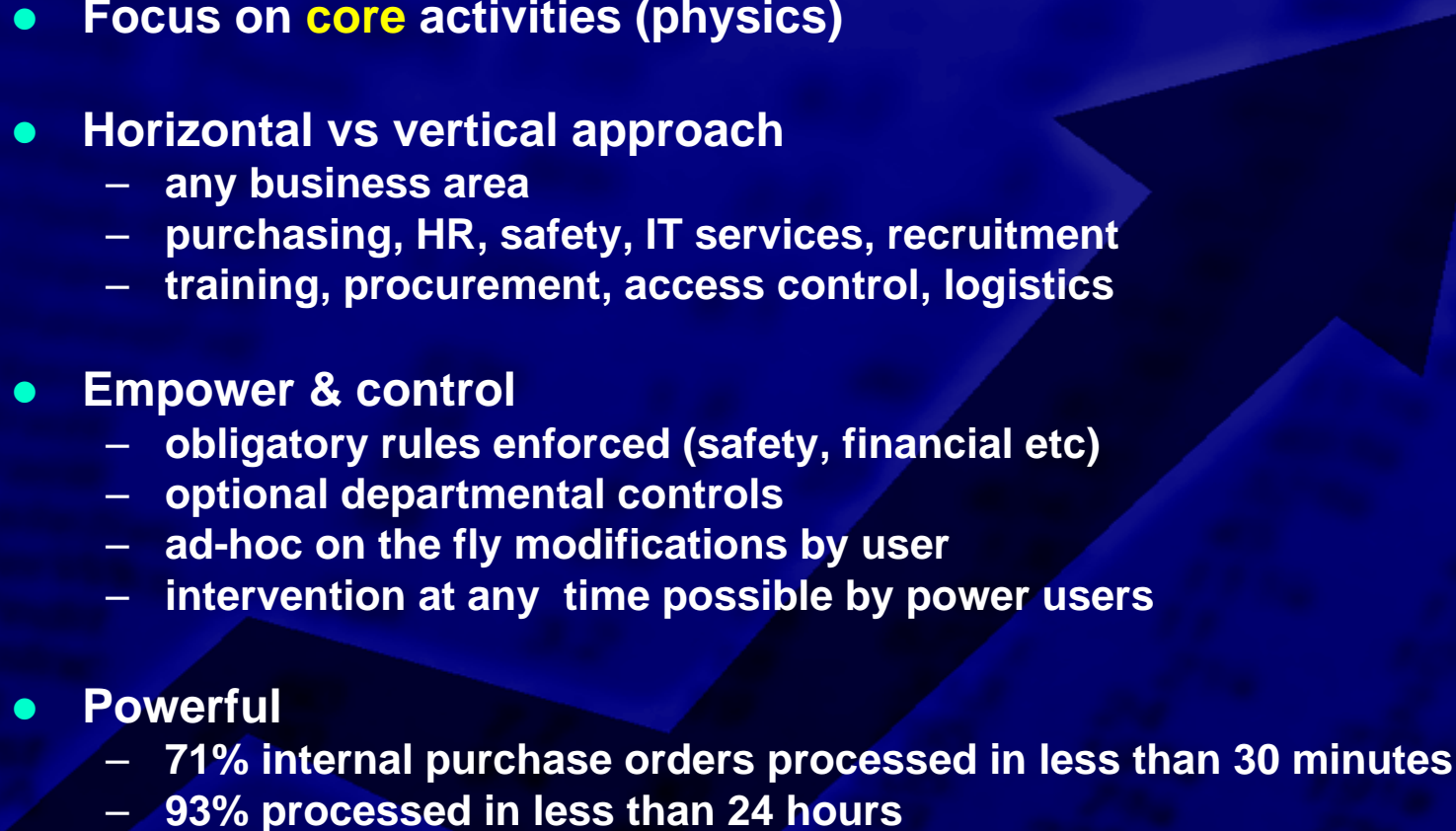
- [Departmental Request \(DR\)](#)
- [Electronic Invoice](#)
- [Electronic Invoice Overview](#)
- [Inter Departmental Transfer \(TID\)](#)
- [Material Request \(Stores\)](#)
- [OSVC](#)
- [Purchase Requisition \(DAI\)](#)
- [Stores Catalogue](#)
- [Temporary Labour](#)

Safety

- [AOC Overview](#)
- [AOC Task Overview](#)
- [Disable/Enable Alarm \(IS37\)](#)
- [Fire Permit](#)
- [IS37 Overview](#)
- [Work Request \(AOC/IS39\)](#)

Local intranet

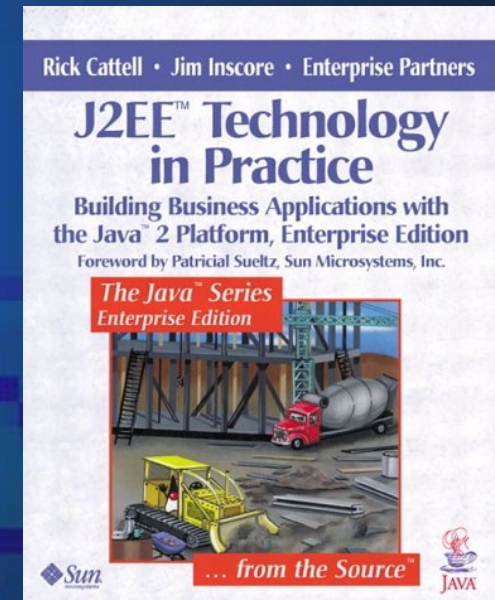
Benefits

- Do more with less (productivity, efficiency, morale...)
 - Focus on **core** activities (physics)
 - Horizontal vs vertical approach
 - any business area
 - purchasing, HR, safety, IT services, recruitment
 - training, procurement, access control, logistics
 - Empower & control
 - obligatory rules enforced (safety, financial etc)
 - optional departmental controls
 - ad-hoc on the fly modifications by user
 - intervention at any time possible by power users
 - Powerful
 - 71% internal purchase orders processed in less than 30 minutes
 - 93% processed in less than 24 hours
- 

Technology

- **Well-written**
 - Blueprint by Sun (inventors of Java) & Oracle as “industry best practice”
 - Rigorous quality assurance procedures (business critical).
 - ⇒ Consequences = low support, low IT maintenance cost
- **Portable / proven technology transfer**
 - Multilingual
- **Reusable**
 - components, procedures & technology
- **Scalable**
 - 150,000 procedures per year
 - 29 currencies
 - 6,500 active users, 2000/day
 - new doc every 30 seconds
 - 360,000 signatures per year
 - used in 49 countries

 - over 2 billion CHF of money committed
- **Mature**
 - evolved : mainframe (1990) -> client/server(1992) -> Web (1998)
 - 15 years electronic process experience
 - 6 years e-business experience



Opportunities

Frequently Asked Questions on WWW

FREQUENTLY ASKED QUESTIONS ON W3

An FAQ list is really a cop-out from managed information. You should be able to find everything you want to know by browsing from the WWW project page, as everything should be arranged in a logical way. Here though are things which maybe didn't fit into the structure, with pointers to the answers which maybe did. Its an experiment, started May 92. The questioners are anonymous.

I am just starting: how do I find out more? [1]

How does www keep track of the available servers? [2]

How does W3 compare with WAIS and Gopher? [3] ?

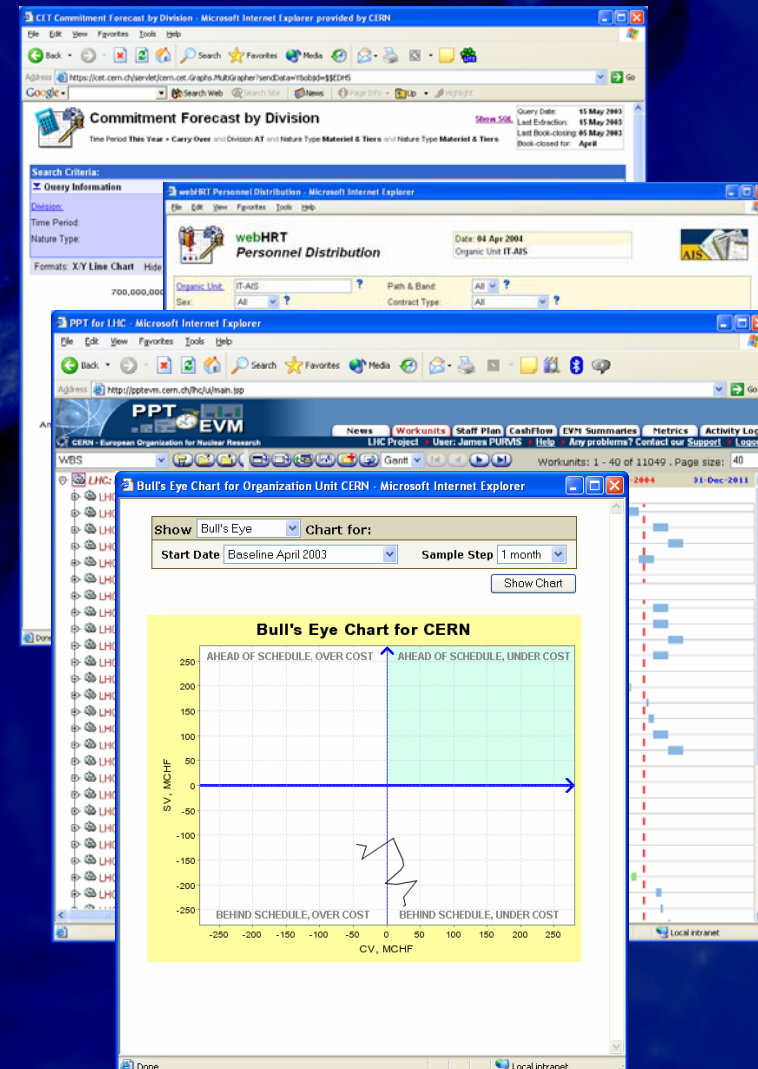
How do I create my own server? [4] ?

1-10, Up, <RETURN> for more, Quit, or Help: ■

Further opportunities

- Management reporting
 - Financial
 - HR
- Staffing simulation
- Project & earned value management (EVM)

| | Paid (Charted to Budget Code CBF) | Annual Commitment (CFP) | Annual Open Commitment (CFP) | Payment Budget (CFP) | Pipeline (CFP) | Commitments Incl Pipeline | Balance (Including Pipeline) | Percentage Budget Used (Including Pipeline) | Balance (Excluding Pipeline) | Percentage Budget Used (Excluding Pipeline) | Chart |
|-------------|-----------------------------------|-------------------------|------------------------------|----------------------|----------------|---------------------------|------------------------------|---|------------------------------|---|-------|
| 16150 | 42,513.46 | 42,751.46 | 238.00 | 40,000.00 | | 42,751.46 | -2,751.46 | 107 | -2,751.46 | 107 | |
| 16151 | 7,684.10 | 7,684.10 | | 20,000.00 | | 7,684.10 | 12,315.90 | 38 | 12,315.90 | 38 | |
| 16152 | 111,491.82 | 111,491.82 | | 100,000.00 | | 111,491.82 | -11,491.82 | 111 | -11,491.82 | 111 | |
| 16153 | 21,696.00 | 22,073.50 | 377.50 | 20,000.00 | | 22,073.50 | -2,073.50 | 110 | -2,073.50 | 110 | |
| 16640 | 48,246.10 | 48,246.10 | | 35,000.00 | | 48,246.10 | -13,246.10 | 138 | -13,246.10 | 138 | |
| Grand Total | 233,631.58 | 232,247.86 | 615.50 | 215,900.00 | | 232,247.86 | -17,247.86 | 108 | -17,247.86 | 108 | |



Thank You

For More Information

Browse to:

<http://ais.cern.ch>

or Email:

james.purvis@cern.ch

Question : Build vs Buy?

- **Best of Breed**

- Buy best solution for each business unit
- We manage the integration & customisation
- We provide transparent layer for end-users
- E.g. Financials, HR, Payroll, e-recruitment

- **Be-spoke development**

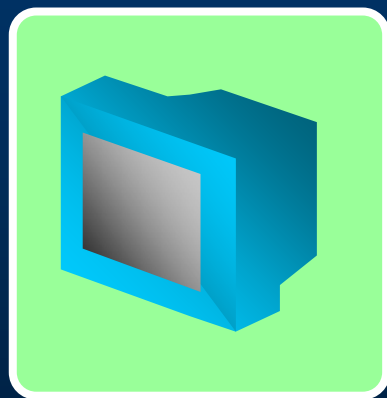
- Where market availability doesn't meet CERN needs
- E.g. Workflow, Reporting, Earned Value Management, Contract Management

Question : ROI?

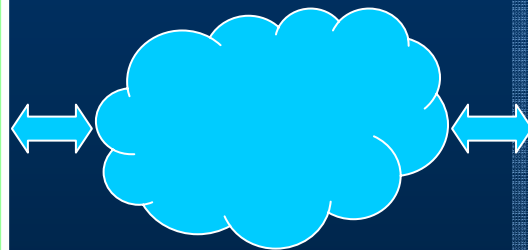
- Investment Cost :
 - 8-10 person years initial development
 - 4 wks per business process
 - 1 FTE support & operations
- Return
 - FTE savings (see <http://ais.cern.ch/>)
 - “Traditional ROI metrics not always applicable with e-business solutions”

Question : Architecture

'Classical' 3-tier



'Thin'
Web Client

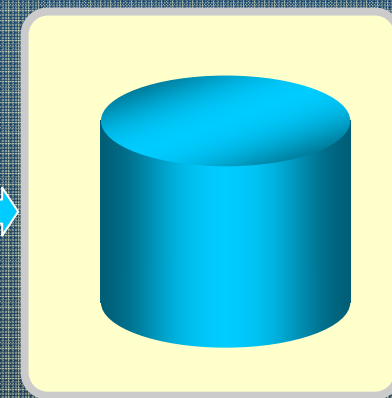


Network
Intra / Internet



9i Application
Server

App Server 9.0.2
Sun Enterprise 450
4 CPU
2Gb Ram
250Gb RAID Disk



Oracle Database

Oracle 8.1.7.4
Sun Enterprise 420R
4 CPU
4Gb Ram
300Gb RAID Disk