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Crossing the SOA Chasm with Open Source

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Agenda

❑ New Business and IT market market environment

❑ What is SOA and what does it change?

❑ Open source trends and expectations

❑ IDC guidance

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Now days, Enterprises need

Human Capital

Customer Care

Performance Management

Store/Branch Ops

Innovation/PLM

Sales & Marketing

Production

Supply Chain

Future of Changing Business World

Business challenges – "Better IT alignment"

- Product Innovation & Customer Care
- Shorten time-to-market & Real-time operational metrics
- Enhancing Supply Chain & Customer Insight
- Improve business performance, quality and ROI while reducing costs
- Minimize risk associated with change including M&As and divestitures

Today

- Rapidly changing conditions … uncertainty … pressure
- Growing faster than resources can be acquired
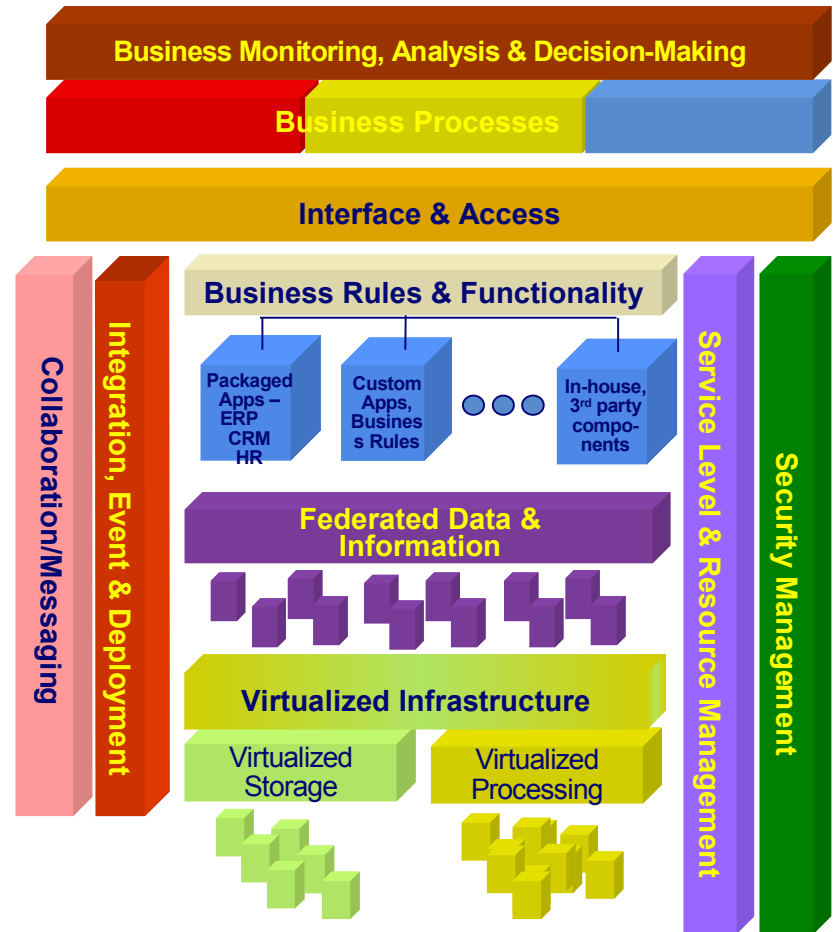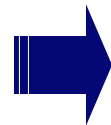- Need to respond faster to competition

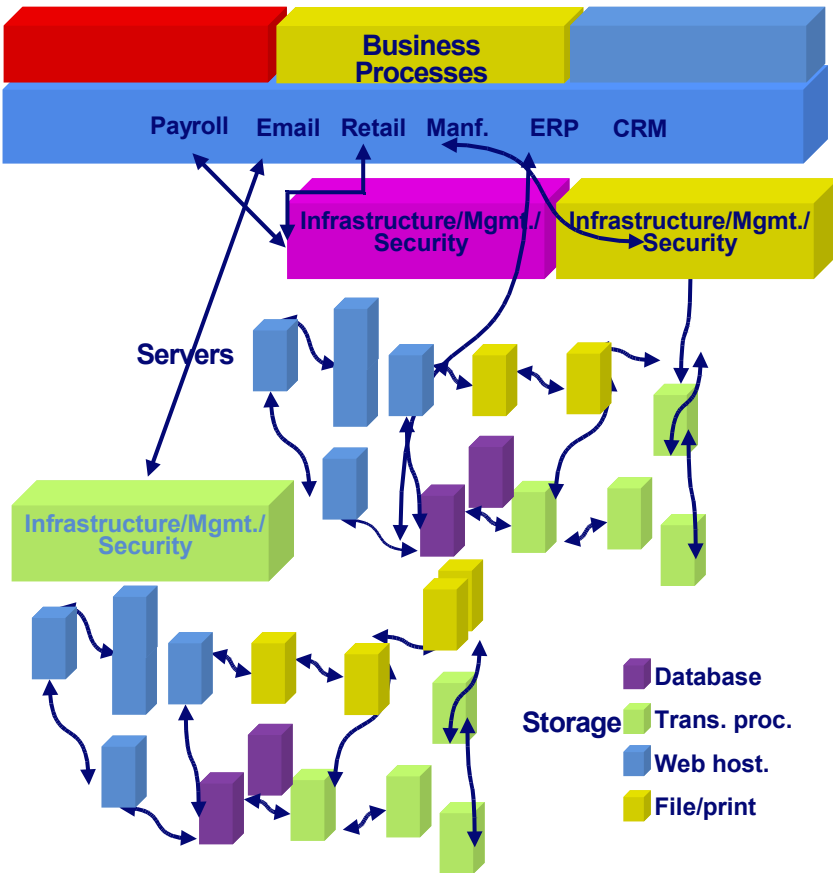**Tomorrow . . .**

- Faster change
- Faster growth
- More aggressive competition

> **How we handle it matters . . . .**
> **To IT : We need the ability to make faster operational changes**

Demands to change from big mess

Source: IDC 2006

Dynamic IT

Describing a "vision" for the next generation of IT, *and* businesses' use of IT that better supports business' need for ***speed, flexibility and efficiency in low cost***

DYNAMIC IT

Hinge Technologies
for the Dynamic
Enterprise.

IT imperatives

- Link business and IT – "IT inside"
- Reduce costs and complexity, ensure stability and flexibility
- Optimize assets today and tomorrow
- Extend value and reach of the enterprise

Make IT architecture in *strategic priority*
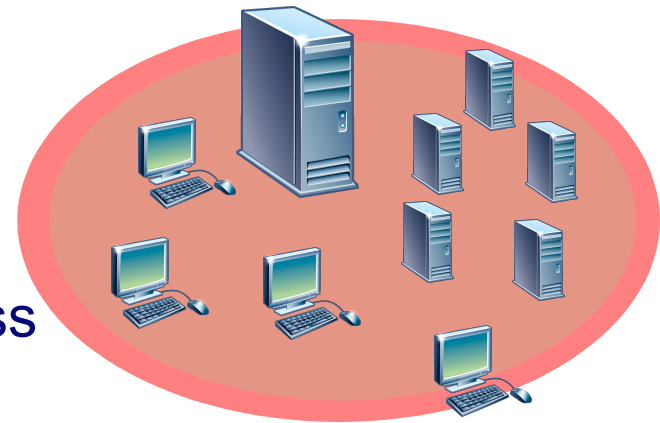
Adopting SOA

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Business Reality

Costs

- Investing in point products to create a total solution is expensive
    - Expected integration costs
    - Hidden support costs

Complexity

- Technology
- Organization structure & process

The cost of doing nothing is unknown

What Is the BIG Deal?

Traditional architectures have limited collaboration with other systems

- Facilitates broad-scale interoperability and unlimited collaboration across the enterprise and across enterprises
- The answer to "agility" in the enterprise, Ability to build flexible business processes and achieve business goals
- Time to market, lower costs, platform agnostic
- Create an infrastructure to enforce business and IT governance
- Drive new business models and revenue streams

Defining SOA

- Service Oriented Architecture (SOA) is a technology architecture based on *disaggregation*.

- It promotes the utilization of *autonomous* application and system "services" abstracted from one another, *independent of implementation*.

- Each service should be *self-describing* with a published interface, accessible to other elements of the system, most commonly over a network.

- In an SOA, services are designed to be *dynamically* invoked.

- Ideally, an SOA should be *modular*, with separate *layers* of functional code, data, workflow, and presentation interfaces.

- Use of Web services is a best practice vs. mandatory requirement.

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Service Oriented Architecture

will increasingly force technology and business collaboration

Composite business
with technology

Know the Technology

Know your systems

Know your business first!

Processes aligned with business

| User interface applications | Composite applications | Straight-through processes |

Composition and orchestration

Registry — portfolio of services

Web services standards

| Legacy application portfolio | New application components |

Business activities
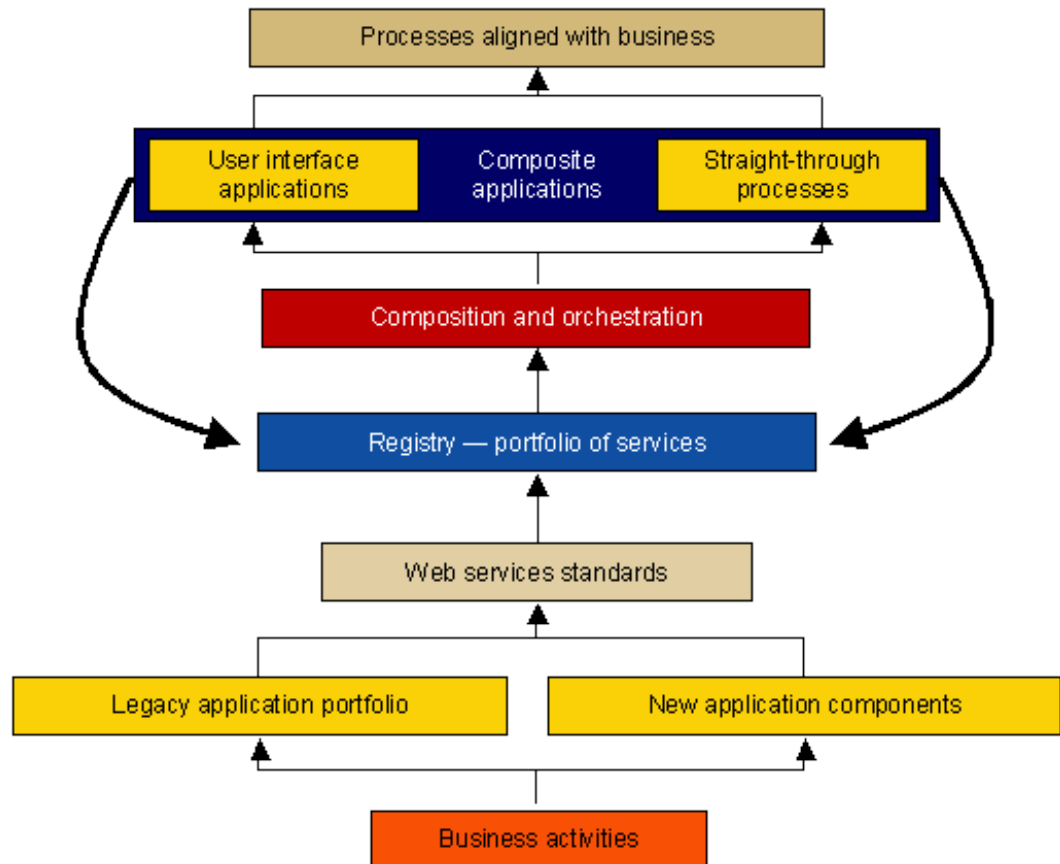
Schematic of SOA enablement

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Source:IDC 2006

SOA helps IT cost reduction:
from "Development" to "Composite"

Proof of concept

$

$2.5M avg.
Per year

Leveraging the SOA:
Composite applications,
creation and/or
Consumption of services
or pre-integrated solutions

$150,000 avg.
Per year

Planning

SOA and Infrastructure build-out

Year 1   Year 2   Year 3   Year4   Year 5   Time

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Source:IDC 2006
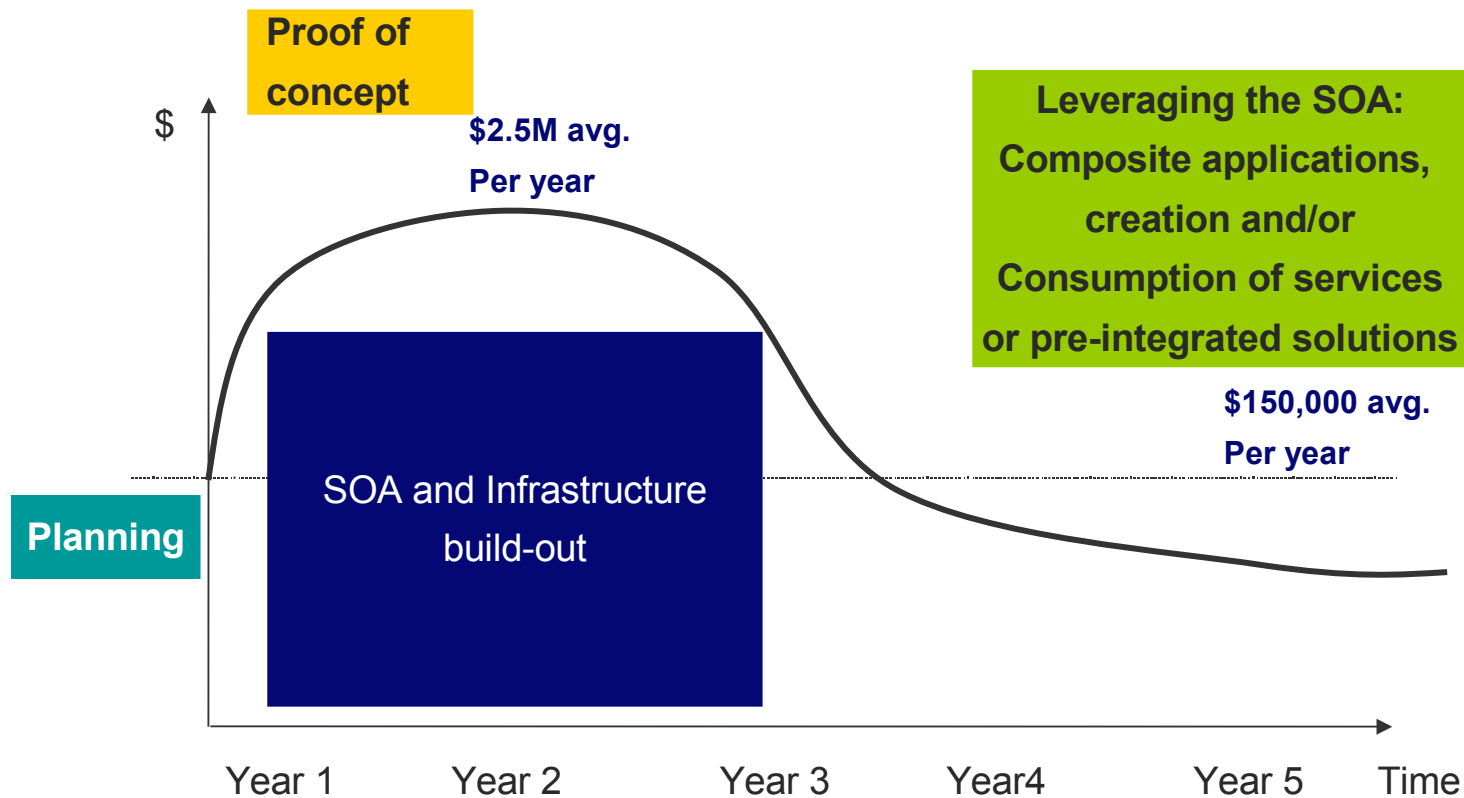
Everything that can be invented has been invented.

Charles H. Duell, Commissioner

United States Offices of Patents

1899

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What is Open Source?

- It looks like these days it is everything.

- Open Source is NOT a specific technology or business model.

- It is only a PRODUCTION and DISTRIBUTION method. The impact of open source is all about the software life cycle.

- The main difference between open-source and proprietary licenses is that the open-source license allows you to create a **derivative** work.

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Proponents said Open Source …

- Open source was a fundamental industry shift

- The entire software world would be rebuilt in open source

- Open source would be more flawless code

- Huge dev. projects can be leveraged in record time

- End users would customize open source for their use

- Customers would get free software

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The Reality of Open Source …

Linux and open source is clearly not a "fad"

Open source helped create major industry change
- Licensing change
- Support life-cycle changes
- Use of community

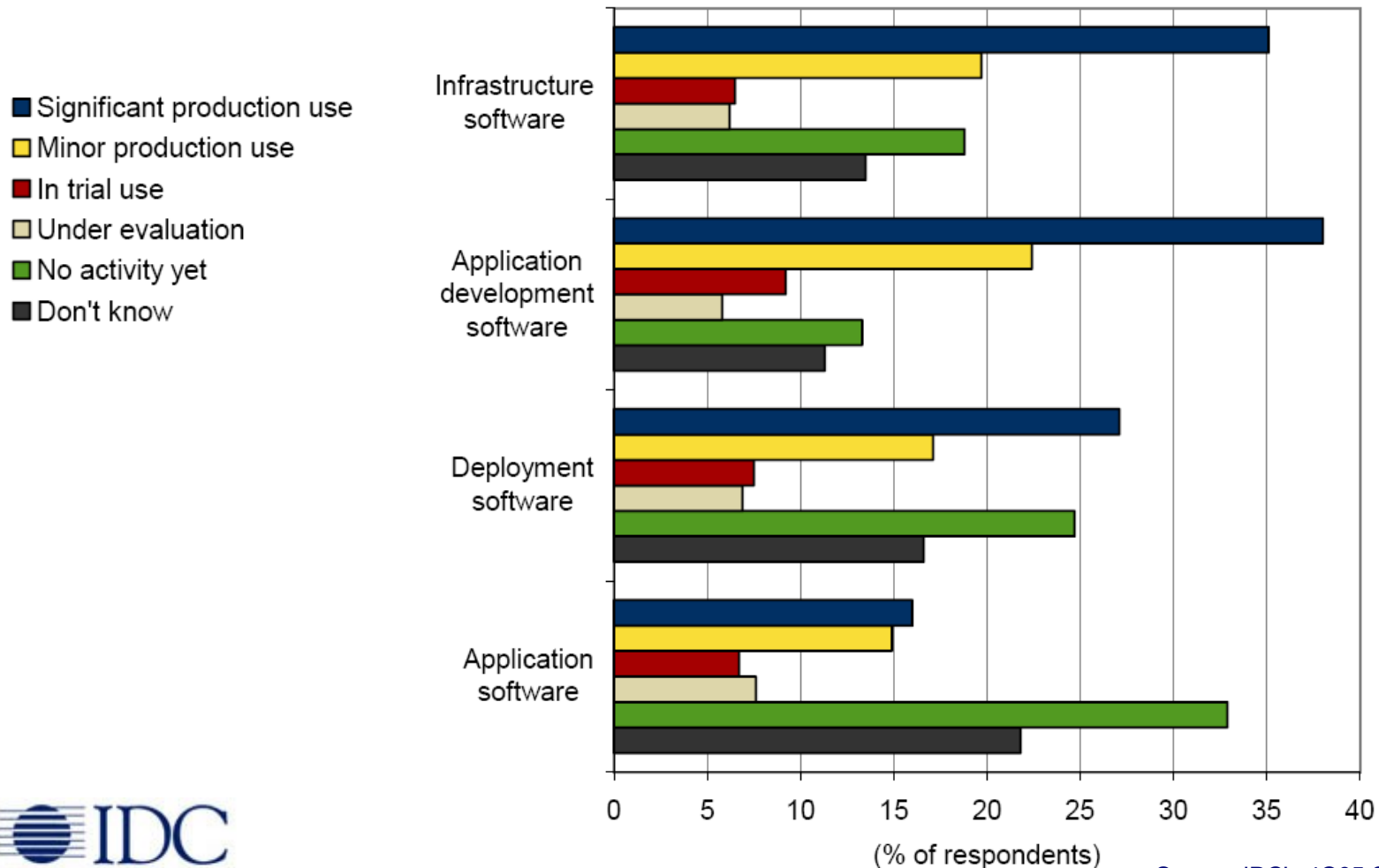Only projects with an ecosystem can be successful with:
- A motivated project steward
- Active, interested, technically competent contributors
- User community necessary

Communities are not flawless
- Community code is not perfect
- There are many independently-moving parts
- One-stop support emerges as hot topic

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Current Level of Open Source Software Adoption

Q. Please indicate your organization's current level of adoption of open source software for each type of software (significant production use, minor production use, in trial use, under evaluation, no activity yet, don't know).

Legend:
- ■ Significant production use
- ■ Minor production use
- ■ In trial use
- ■ Under evaluation
- ■ No activity yet
- ■ Don't know

Categories (top to bottom):
- Infrastructure software
- Application development software
- Deployment software
- Application software

X-axis: (% of respondents), 0 to 40

Source: IDC's 4Q05 Software Developer Network Collaborative Survey

Factors for Open Source Adoptions (#1)

Q. In the context of your current work environment, does each issue in the following list encourage or discourage the use of open source software?
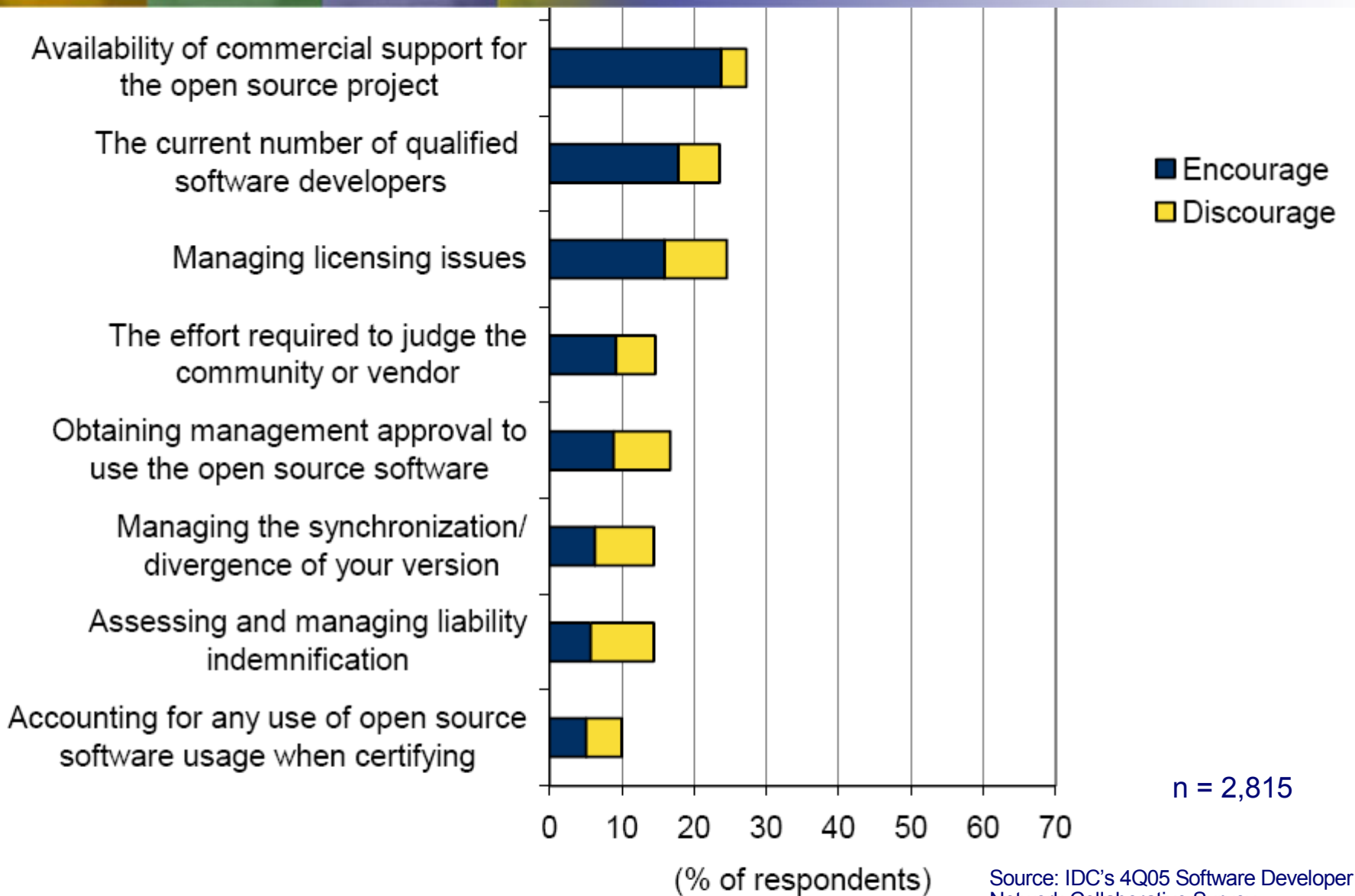

(% of respondents)

■ Encourage
□ Discourage

n = 2,815

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Factors for Open Source Adoptions (#2)

Legend: ■ Encourage ■ Discourage

Categories (top to bottom):
- Availability of commercial support for the open source project
- The current number of qualified software developers
- Managing licensing issues
- The effort required to judge the community or vendor
- Obtaining management approval to use the open source software
- Managing the synchronization/divergence of your version
- Assessing and managing liability indemnification
- Accounting for any use of open source software usage when certifying

X-axis: 0 10 20 30 40 50 60 70

(% of respondents)

n = 2,815

Source: IDC's 4Q05 Software Developer Network Collaborative Survey

Why Open Source Now?

PAST HURDLES

Lack of internal resources

Lack of external support/services

Lack of applications

Uncertainty around viability/sustainability

Complex management

Uncertainty around quality

OVER TIME

Training
Increased support
and formal offerings
Open source beyond Linux
Vibrant communities
Strategic adoption
Quality/security

Are we poised for an accelerated adoption?

Today's Drivers and Inhibitors

DRIVERS

- Viable alternative to commercial software with perceived lower TCO
- Increased number of support players = > trust
- Part of "standardization, consolidation, virtualization, and flexibility"
- A widening range of applications run on open source
- Linux runs on a widening range of devices
- Governmental adoption and support continues

INHIBITORS

- Lack of internal skills
- Lack of understanding of overall TCO
- Misconception around robustness, scalability
- Buy versus build (pendulum swings) and integration is complex
- Few robust preintegrated industry-specific open source solutions
- Lack of pervasive/strategic acceptance in large companies
- Legal risks

OPPORTUNITY

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Where all This Going?

Technology waves → Service Oriented Approach

How applications are developed, deployed, and run:

- Application development backbone - Eclipse
- Composite application built on a commodity grid:
  - Commodity software (Open Source)
  - Commodity operating system (Linux)
  - Commodity computers (Intel)

Open Source Application Infrastructure

- Development Tools
  - Eclipse, NetBeans
- Databases
  - MySQL, Ingres, Cloudscape, PostgreSQL, Sleepycat
- Portals
  - eXo, Jetspeed
- Application Frameworks
  - Cocoon, Struts, Spring, JSF

- Web Servers
  - Apache HTTP
- Application Servers
  - JBoss, Jonas, Tomcat, Resin
- System Management
  - Nagios, Ntop, Nmap

Java to be Open Sourced In October 2006

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Open Source Applications

- CRM
  - SugarCRM, Hibernate
- ERP
  - Compiere, Erpos
- Content Management
  - Mambo, Lenya, OpenCMS, Alfresco Software
- Health Care
  - VistaM (Medspehre), EHR
- Business Intelligence
  - Pentaho, BIRT, Jasper
- Workflow/BPM
  - Bonita, Enhydra Shark, OSWorkflow, Adaptive Planning

Open Source Goes Corporate

"Hey, Yahoo, Disney's on the other line. Call you back."

Open-source software, led by Linux, is barreling into big business. p. 38

Sabre Holdings

"Sabre experience with open source extends to…JBoss and Tomcat. Sabre now considers open source whenever it has an IT project up for review."
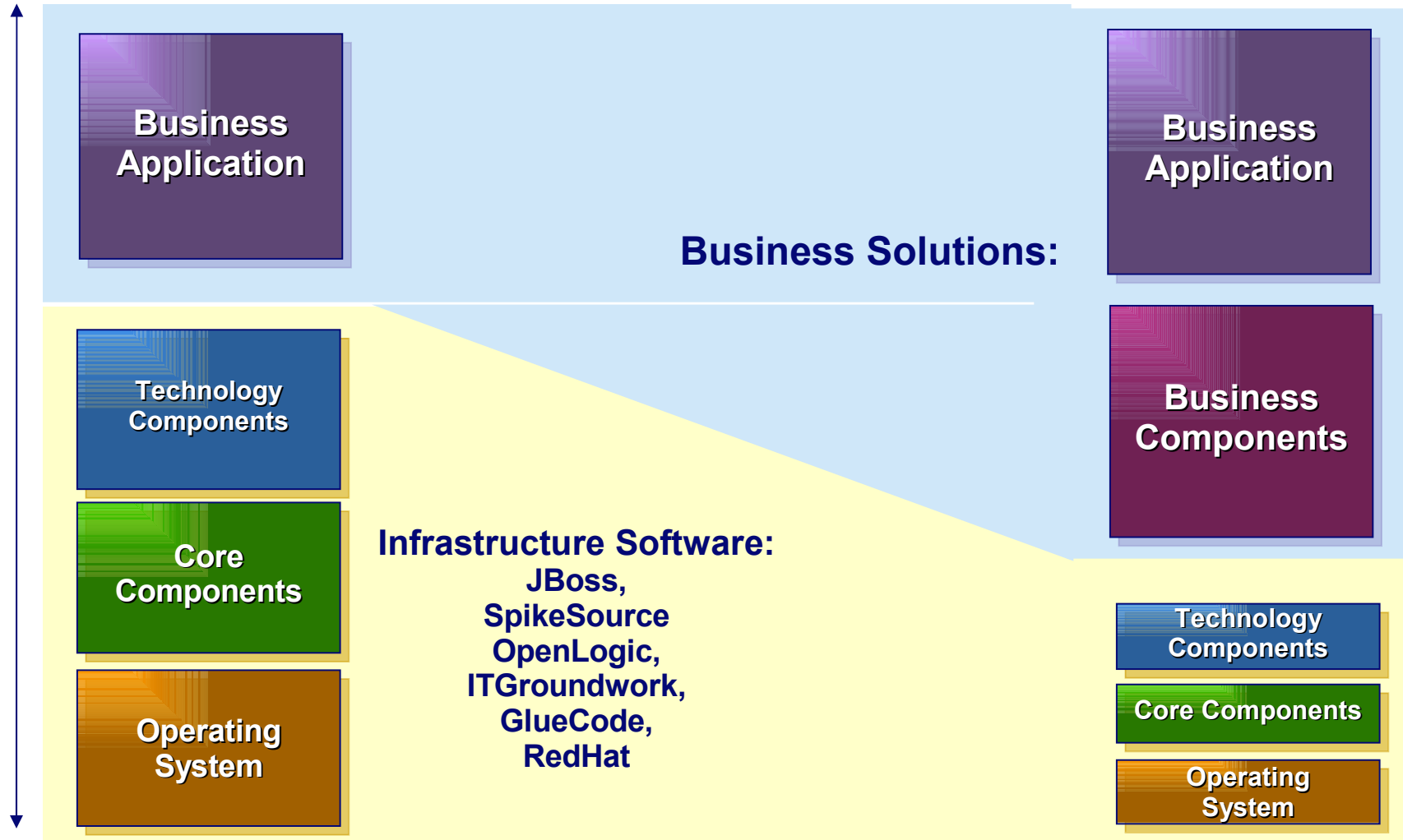
Continental Airlines

"JBoss application server and MySQL database are key components of Continental's homegrown Ticket Reissue and Traveler Alert applications."

The Walt Disney Company

"It (Disney) also is using open-source JBoss to host Java-based Web services."

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*Source – InformationWeek, Open Source Goes Corporate Sept. 26, 2005

Changes in Value Prepositions

Business Solutions:

Business Application

Business Application

Technology Components

Business Components

Core Components

Infrastructure Software:
JBoss,
SpikeSource
OpenLogic,
ITGroundwork,
GlueCode,
RedHat

Technology Components

Core Components

Operating System

Operating System

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Service Enabling with the Right Mix

- Companies worldwide improve business performance by launching new business initiatives.

- IT organizations are under pressure to deliver new solutions with reduced budgets, resources and shorter timeframe.

- IT departments are unable to address each new business initiative. Only a few high-priority items get addressed each year.

- Moving more business initiatives through the IT "funnel" makes companies more "agile" bringing financial gains and competitive advantages.

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Open Sources SOA components (#1)

- **Open Source Object Request Broker (ORB)**
  - ORBs use the standardized IIOP protocol on-the-wire, you can mix and match different ORB implementations,
  - ORBACUS, MICO etc.

- **Open Source Web Services Frameworks**
  - Axis-2, JAX-WS, ActiveSOAP, Apache Synapse etc.

- **Open Source Middleware**
  - WSO2 Tungsten supports all the components of the WS-* stack and provides an integrated runtime

- **Open Source ESBs**
  - the highway within the SOA enterprise architecture,
  - ServiceMIX, Jboss (JEM), Celtix etc.

- **Open Source JMS**
  - ActiveMQ, JORAM, MantaRay, JbossMQ(Jboss AS 5.0) etc.

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Open Sources SOA components(#2)

- **Open Source Contract Registries**
  - UDDI Standard defines a registry system for WSDL contracts
  - UDDI creates a standard interoperable platform
  - jUDDI(apache), Ruddi(InspireIT), Nsure UDDI(Novell),
    Sun service registry, ebXML registry, FreebXML etc.

- **Open Source Distributed Components Framework**
  - Newton : OGSI based distributed component framework

- **Open AJAX**
  - Presentation side of SOA

Are You Ready for SOA ?

- A lot of promises of interoperability at the cost of:
    - Lack of enterprise scale QoS
    - Complex standards which are still forming
    - Lack of tools and frameworks to support standards
    - Needing to be closely familiar with internal message formats (encoding standards etc.)
    - Performance penalty
    - Longer development

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IDC Guidance

- Focus on an incremental SOA blueprint and choose the open source technologies that can give your organization that leverage forward with the right cost and functionalities.
  -> Open source should be a core element

- Always pilot with a team comfortable with the technology and work on small quick win projects.

- Nurture mindset with business users and foster that eco-system of service building within the corporate.

- Open source community is evolving in the SOA space with a number of promising emerging technologies.

- Open source tools are available to help in corporate SOA direction.

Thank You

For more details,

please email me at
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