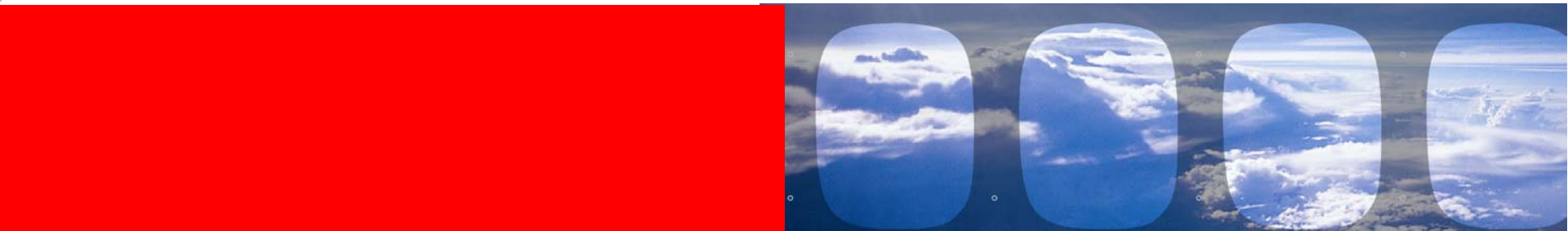


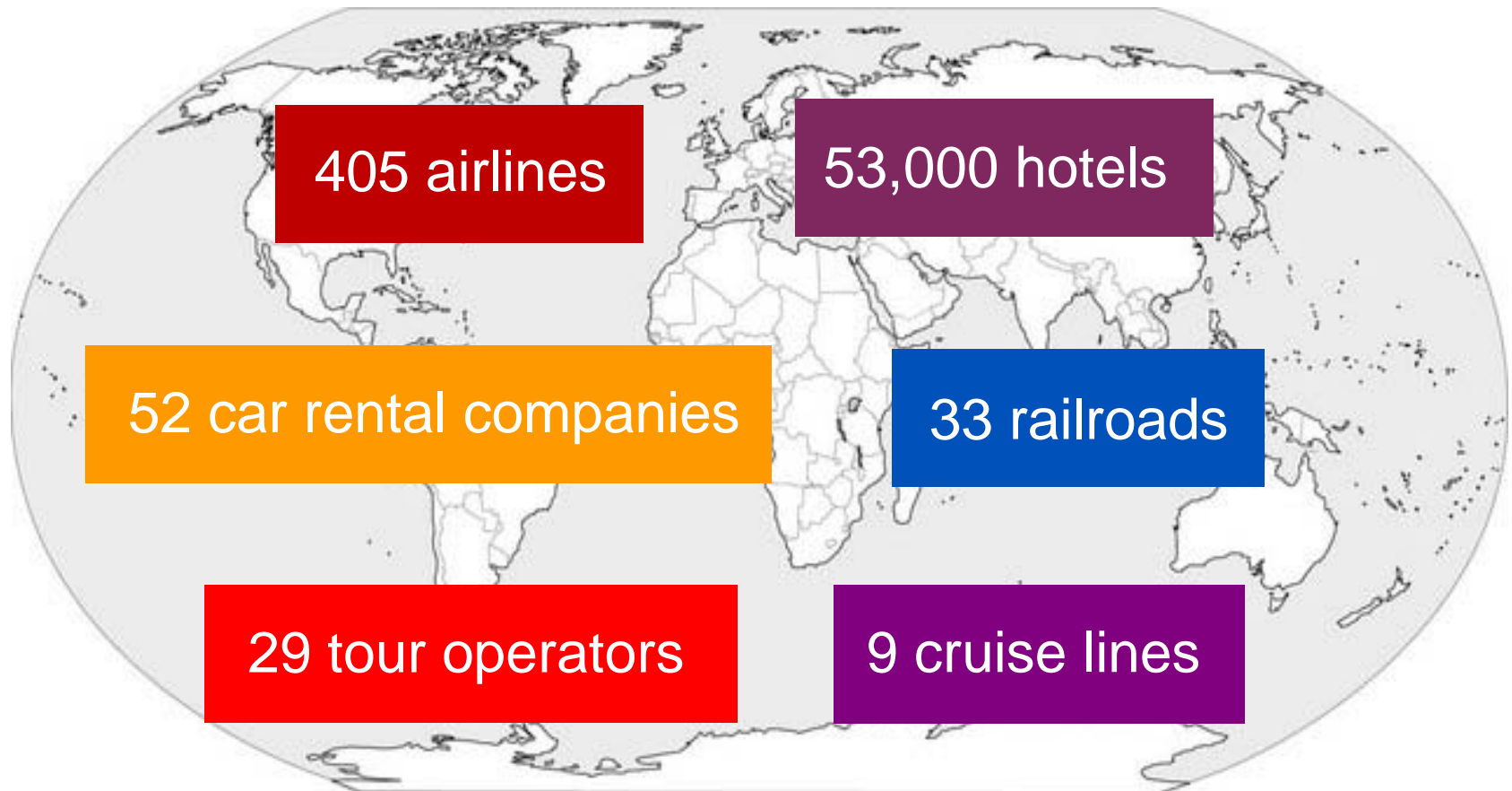
Connecting people with the world's greatest travel possibilities



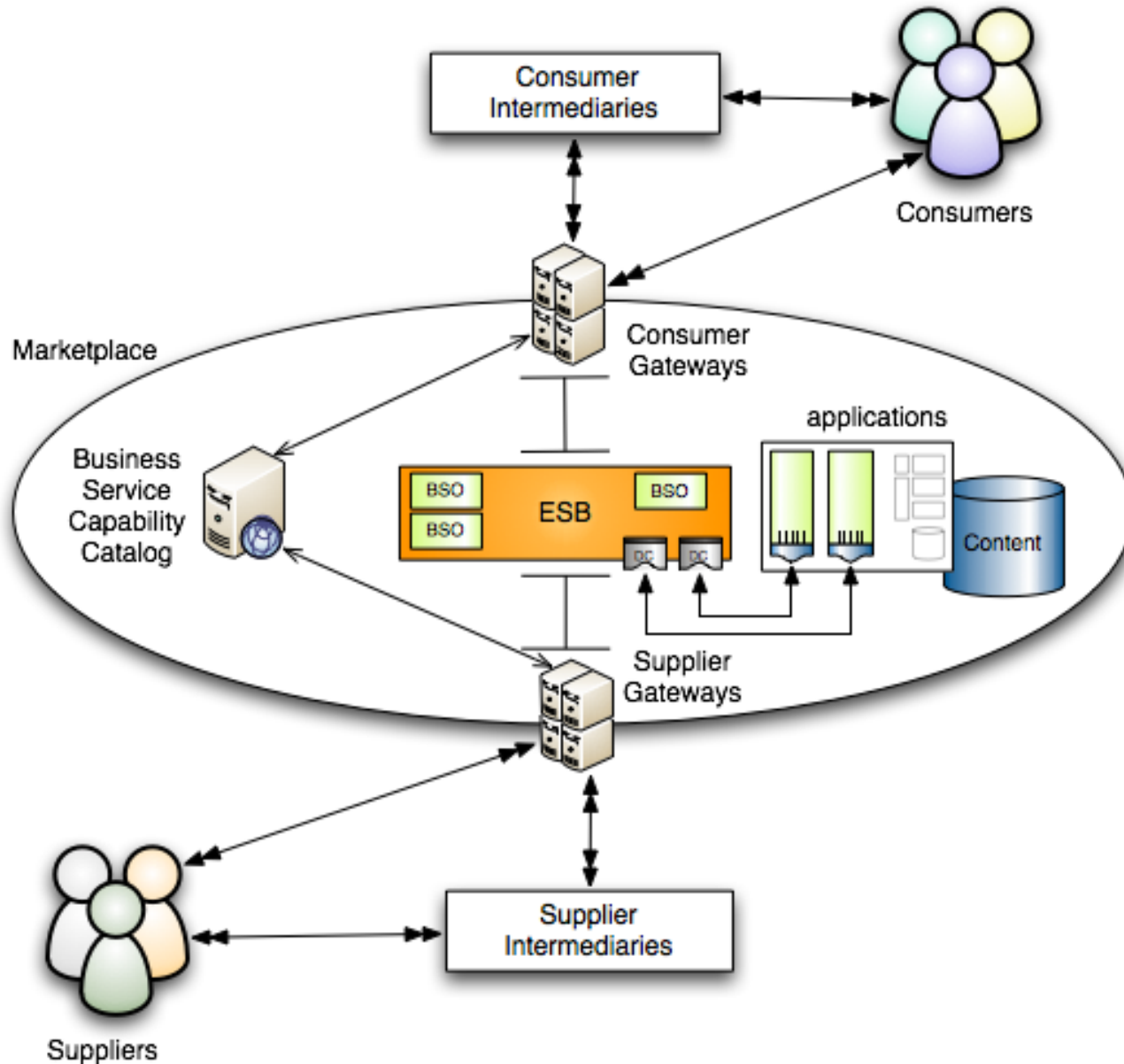
# Business Impact of OSS at Sabre

May 2011

# About Sabre Holdings



# Travel Marketplace



# Sabre's Technology Scale

32,000

Transactions every second

1 million

Transactions every  
minute

Leading provider of travel  
technology products and  
services on the planet

500 million+

Transactions every day

24 hours

Every day — seven days  
a week

160 million+

Transactions every day  
via Web services

It's Always Peak Hour Somewhere In The World

# Sabre Fast Facts

Technology • People • Capabilities

**50,000+**

travel agencies accessing  
*Sabre* travel content globally

**380+**

Airline and airport customers using  
our decision support technologies

**24 hours**

Customer support every day –  
**7 days** a week

**1.5 billion** travelers board  
our customers' aircraft using our  
solutions annually

**3,000+**

Technologists across Sabre;  
**over 100** with advanced  
operations research degrees

# API Billionaires Club



**5 billion API calls / day** (April 2010)



**5 billion API calls / day** (October 2009)



**3 billion API calls / day , 75% of all traffic** (April 2010)  
**750 million API calls / day**



**267 million API calls / day** (Q3 2009)



**100 million API calls / day** (March 2009)



**37 million API –delivered stories / day** (March 2010)



**Over 50% of all traffic via API** (March 2008)



**Over 100 billion objects stored in S3** (March 2010)

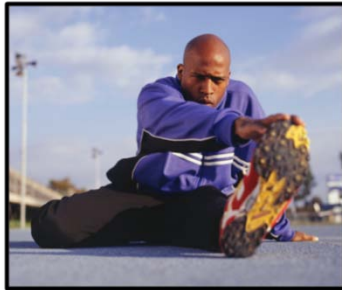
Source: [www.readwriteweb.com](http://www.readwriteweb.com)

# Sabre Technology Drivers



## Stability

- Up-time critical



## Flexibility

- Rapid industry change



## Cost

- Standards & Re-use

# Sabre's Technology Evolution

**60's – 90's**

Legacy TPF

**2-Tier Architecture**  
**Mainframe Hosting**  
**Ad-hoc Content Access**  
**No Services Architecture**

TPF Platform Standard  
TPF Instrumentation  
TPF Reporting

**2000 - 2006**

Home-grown SOA

3-Tier Architecture  
Open Systems Hosting  
Improved Content Access  
New Services Architecture

**No Platform Standardization**  
**Ad-hoc/Std Instrumentation**  
**Ad-hoc/Std Reporting**

**2006 -**

Open SOA

n-Tier Service Architecture  
Open Systems Hosting  
Open Content Access  
Open Services Architecture

Platform Standardization  
Standard Instrumentation  
Standard Reporting



# Why OSS?

## The main reason for adopting OSS alternatives?

- Avoid software capital costs

## But, as we discovered, lower software costs weren't the only advantage

- New technologies can be proven in-house, without a large up-front cost
- Access to source code is a strong advantage
- Avoids being locked in to a vendor solution
- And...

## ...a positive cultural shift began to occur within our development community

*“Over time, use of open source software led to increased developer engagement, a greater sense of ownership of the code, and the evolution to an open contributor culture. Developers also delivered transactional, mission-critical systems that perform well on scale-out hardware while saving millions.”*

**Jeffrey S. Hammond, Forrester Research**  
Case Study: Sabre — A Culture Of Engagement

# OSS Contributions Intrinsically Motivated

“Why have you contributed to an open source project? (Choose all that apply)”



Base: 226 App dev professionals Forrester – Dr. Dobbs Developer Technographics Q3 10

# The Move to Open Source Technologies

**In 2008, Sabre's Enterprise technology standards began to include OSS within the production infrastructure:**

- RH Enterprise Linux
- Apache
- Tomcat
- Subversion
- JUnit
- Hibernate
- Spring
- Fuse ESB, Fuse Mediation Router

# Software Selection Case Study – Fuse Suite

COTS vs OSS

Proof of Concept

PoC Results

From PoC to Production

Setting the Standard

- Presented evaluation results and metrics to executive team

# Outcome

- Application requirements delivered in short timeframe
- Met Sabre's scalability, performance and reliability needs
- Learning curve not as steep as anticipated
- Our developers like having the source and, in some cases, contributing changes back to the community
- Our developers liked working with the key contributors to the Apache community
- FUSE product roadmap fit Sabre's direction
- Fuse ESB, Fuse Mediation Router adopted as Enterprise standards in 2008

# OSS Challenges

- How to establish and maintain COEs?
- OSS Policy had to be refined
- When is 3<sup>rd</sup> party support required
- Indemnification protection
- Enterprise standards monitoring and enforcement - avoid multiple OSS tools being deployed for the same thing
- Establishing rules for contributions to the community
- Ongoing debates over which OSS solution to use

# Summary

- Open Source Software has proven itself at Sabre
- Policies, processes and standards are still important
- Sabre's development community has embraced OSS

Is OSS good for business?      **Absolutely**



# Questions