

Overcoming the Challenges of Establishing Service and Support Channels

Presented at

"Implementing Open Source for Optimal Business Performance"

Conference - Singapore 2006

Ronald Bradford

ronald.bradford@arabx.com.au

*"Independent Consultant specialising in Database Modeling, Large Systems Design
and Web Development Technologies."*



Overcoming the Challenges of Establishing Service and Support Channels

Agenda

- Background
- Focus Areas
- Moving Forward



Overcoming the Challenges of Establishing Service and Support Channels

Background Contents

- What are the Challenges?
- Traditional Software Development - Service and Support Costs
- Why Deploy Open Source?
- Open Source verses Free
- Components Requiring Service and Support



Overcoming the Challenges of Establishing Service and Support Channels

Discussion Assumptions

- Web Deployed Applications and Technologies
- Existing Developed product (not purchased product or desktop infrastructure)
 - For example, not a Linux Desktop/Open Office rollout
- Existing systems and practices (not a new startup company)
- Embracing positive change



Overcoming the Challenges of Establishing Service and Support Channels

What Are The Challenges?

Establishing Service and Support Channels

1. Cost
2. Technology
3. Staff
4. Expertise
5. The Customer
6. Cost



Overcoming the Challenges of Establishing Service and Support Channels

What Are The Challenges?

Establishing Service and Support Channels

1. Cost
2. Technology
3. Staff
4. Expertise
5. The Customer
6. Cost

OVERCOME:

It all comes down to cost,
but can Open Source really help?



Overcoming the Challenges of Establishing Service and Support Channels

Traditional Software Development - Service and Support Costs

- **Infrastructure**

Hardware (H/W), Operating System (O/S), Database, Development Tools

- **Software Development**

Analysis & Design, Development, Testing, Training, Support
Repeating Analysis & Design/Development/Testing/Training/Support

- **Research (R & D)**

Investigating New Technologies,
Protoyping, Trialing

IDENTIFY

Where are the greatest costs and
greatest potential savings



Overcoming the Challenges of Establishing Service and Support Channels

Why Deploy Open Source?

The Glossy Reasons

- Lower Costs in O/S, Database, Development Tools
- Reduces H/W specs
- Generally improved security (i.e. not Microsoft)
- Generally multi O/S compatible (e.g. Linux and Microsoft)



Overcoming the Challenges of Establishing Service and Support Channels

Why Deploy Open Source?

The Working Reasons

- Control
- Ownership
- Cut out the middle man
- Flexibility
- Leverage existing knowledge



Overcoming the Challenges of Establishing Service and Support Channels

Why Deploy Open Source?

In Summary “Enabling the Marketplace to decide”

- Open Source is about Freedom to Develop
- Open source software is here to stay
- Complete Enterprise Solution or mixed and matched with commercial software
- Companies investing time now will realise benefits immediately, ongoing and lasting
- Employees like it. Working with new might help attract, **retain and motivate** internal IT professionals, leading to greater productivity over time.
- No one-size-fits-all approach to using OSS for large IT organisations.

IDENTIFY

What are your objectives in considering Open Source?



Overcoming the Challenges of Establishing Service and Support Channels

Open Source verses Free

FOSS - Free and Open Source Software (also **OSS/FS**, **FLOSS**)

- **Open Source**

~ 90 different licenses (Started with GPL, upcoming GPLv3)

<http://www.opensource.org/licenses/>

- **Free (no limits)** *(No cost, but no possible flexibility)*

e.g. Java

- **Free (but with limits)**

e.g. Oracle 10g Express Edition/ Microsoft SQL Server 2005 Express Edition

"Open source is ultimately not free, however you benefit greatly in the initial development work, the risks and future development"



Overcoming the Challenges of Establishing Service and Support Channels

Components Requiring Service and Support

- **Technology Stack** (for example LAMP - Very successful marketing story)
 1. Operating System (O/S) - **L**inux
 2. Application Server/Middleware - **A**pache
 3. Database - **M**ySQL
 4. Development Language(s) - **P**HP/Perl/Python
- **Business Logic**
 1. Your Business Worth
 2. Supporting your Customer Base
 3. Analysing your Competitors



Overcoming the Challenges of Establishing Service and Support Channels

Focus Areas Contents

Next Section

- Technology Stack Focus Points (for Service and Support)
- DLOA
- War Stories
- Resource Options
- A Business Process Approach
- Frameworks



Overcoming the Challenges of Establishing Service and Support Channels

Technology Stack Focus Points (for Service and Support)

DLOA "A Priority of Importance in Software Components"

1. Database
2. Language(s)
3. Operating System
4. Application Server

Top Two Focus Points

1. Database
2. Language(s)



Overcoming the Challenges of Establishing Service and Support Channels

4 weeks in Database Wars

"Linux has won the OSS battle for the OS, the Database is next."

The Events Oct/Nov 2005

- Oct 24 **MySQL** GA Release of Version 5.0 with major new features
- Oct 28 **Oracle** Corporation Releases Oracle 10g Express Edition (FREE)
- Nov 7 **Microsoft** Releases MS SQL Server 2005 Express Edition (FREE)
- Nov 8-9 The first **Open Source Database Conference**
- Nov 17 Sun Microsystems announces **ProgreSQL** Relationship

Forrester Report - "Trends 2006: Open Source Databases"



Overcoming the Challenges of Establishing Service and Support Channels

4 weeks in Database Wars

"Linux has won the OSS battle for the OS, the Database is next."

The Outcomes

- Acknowledgement of low end entry marketplace
- Accountability

Major OSS Database Players

- MySQL
- PostgreSQL
- Berkeley DB
- Ingres (now open source)

FOCUS POINT 1

Choice of Database Products (plural)



Overcoming the Challenges of Establishing Service and Support Channels

Resource Options

- Internal Resources
- External Resources Onsite
- External Resources Offsite



Overcoming the Challenges of Establishing Service and Support Channels

Externally Located Resources

Also known as Outsourcing/Offshoring/Tele-commuting

"Global Software Development Strategies"

- Language
- Reliability
- Standards
- Security
- Expertise
- Reproducibility

"In this day and age, systems can be development, maintained and supported externally, but at what real cost?"



Overcoming the Challenges of Establishing Service and Support Channels

The Hobbist and the Professional

- **Hobbist**
 - Downloadable software and examples
 - Online tutorials
 - Books like Learn in 24 hours/For Dummies
- **Professional**
 - Formal Qualifications
 - Grounding in sound programming practices
 - Understanding of SDLC principles
 - Worked in team environment
- **Middle Ground Developer**
 - Time to skill verses output productivity
 - Depends on environment and requirements

"Open Source can easily lead to poor design and programming practices."

FOCUS POINT 2

Identify balance in resourcing requirements



Overcoming the Challenges of Establishing Service and Support Channels

The India-China Thing

- Fad
- Phenomenon
- Opportunity

India initially established their credibility by achieving Capability Maturity Model® (CMM) Level 5 certification. The marketing messages have long been focused on quality, assurance, and control. This was exactly what CIOs needed to hear to give them the courage to attempt distributed development.

However, as it turned out, certifications and control don't guarantee positive results.



Overcoming the Challenges of Establishing Service and Support Channels

Data Quality

- **It's a killer**

How many new systems are developed to enforce levels of Data Quality, but contain migrated data not of that minimum quality, effectively limiting all future functionality to the level of quality of the worse data. (a.k.a. The weakest link of a chain)

- Would the system be simpler and therefore easier to support and develop if migrated data was corrected
- Root cause of system complexity and therefore support.



Overcoming the Challenges of Establishing Service and Support Channels

Data Integrity

- Various applications accessing data source
- Business Knowledge enforced
- Working Data Quality

OVERCOME

Allocate the time to correct
the source

FOCUS POINT 3

Data is useless.
Information is priceless.



Overcoming the Challenges of Establishing Service and Support Channels

A Business Process Approach

Key Area

Minimising The Need

- Testability
- Standards
- Methodology
- Data Quality
- Metrics

"None of this information is new or radical, but one part of addressing the problem is addressing the cause."



Overcoming the Challenges of Establishing Service and Support Channels

A Business Process Approach

Key Area

Testability

- Dedicated Development/Test environments
- Rigid reproducibility of functionality - Version Control
- Extensive Testing/Training Data

Documented Standards

- Programming
- User Interface
- Data Exchange

FOCUS POINT 4

Improving Reproducibility.



Overcoming the Challenges of Establishing Service and Support Channels

New Methodology Approach

Key Area

Change the time to market

- **Using an Agile Methodology** (e.g. Extreme Programming XP)
Also Scrum, Adaptive Software Development, Crystal Light Methods, Feature-Driven Development, Lean Development.
- **Short iterations (days not months)**
- **High user input and ownership**
- **Automated Testing**
- **Many Open Source Projects are following these guidelines**



Overcoming the Challenges of Establishing Service and Support Channels

New Methodology Approach

Key Area

- Using an agile method is not for everyone

<http://www.martinfowler.com/articles/newMethodology.html>

"A reason for agile methods, focusing not so much on their weight but on their adaptive nature and their people-first orientation."

Agile Ecosystems

*Identify the turbulence in our economy
and the need for methodologies
that emphasize*

- *"exploration" (delivering new products)*

rather than

- *"exploitation" (delivering know products more efficiently)*

OVERCOME

Choose a methodology that
complements your requirements,
resources and technologies



Overcoming the Challenges of Establishing Service and Support Channels

XP Principles

*“Extreme Programming is a discipline of software development based on values of **simplicity**, **communication**, **feedback**, **courage** and **respect**. It works by bringing the whole team together in the presence of simple practices, with enough feedback to enable the team to see where they are and to tune the practices to their unique situation.”*

<http://www.xprogramming.com>



Overcoming the Challenges of Establishing Service and Support Channels

XP Principles

YAGNI

- **You**
- **Aren't**
- **Going to (Gonna)**
- **Need**
- **It**

"Always implement things when you actually need them,
never when you just foresee that you need them."



Overcoming the Challenges of Establishing Service and Support Channels

XP Principles

Test Driven Development

- Write tests before writing code
- Write tests for every bug found
- With complete tests, you have implied Impact Analysis
- Leads to automated testing

“Test driven development (TDD) is emerging as one of the most successful developer productivity enhancing techniques to be recently discovered. The three-step: write test, write code, refactor.”

- This started in the Java environment, however frameworks for unit testing are available in over 30 languages



Overcoming the Challenges of Establishing Service and Support Channels

XP Principles

FOCUS POINT 5

Embrace change that best suits your organisation.

Team Development

- 2 developers working on one computer (Pair Programming)
- Improves code quality, productivity, collaboration and Skills Transfer
- Highly productive in a short time
- Test Driven

"Unit testing makes the world a better place because it gives us the knowledge of a change's impact and the confidence to refactor without fear of breaking code unknowingly."



Overcoming the Challenges of Establishing Service and Support Channels

Metrics

Essential to compare before/after

- Simple concept, but how many really do it?
- Does not have to be exhaustive
- Should be a mixture of staff and technology measurements
 - Open Defects / Defects per code size
 - Accuracy of estimates / Adherence to schedule
 - Length of time to resolve open problems
 - Software reliability
 - Developer satisfaction / Customer satisfaction

FOCUS POINT 6

Only measurement can confirm business process improvement.

“write less code to get the same thing done”



Overcoming the Challenges of Establishing Service and Support Channels

Moving Forward Contents

Next Section

- Observing the Big Players
- You need a Home Team
- A Little Education
- Trial Implementations
- Don't Use Open Source, Be Open Source



Overcoming the Challenges of Establishing Service and Support Channels

Observing the Big Players

Case Study 1 - IBM

- **Eclipse**

An open source software development project dedicated to providing a robust, full-featured, commercial-quality, industry platform for developing highly integrated tools

- support of over 50 member companies
- Now hosts 4 major Open Source projects that include 19 subprojects

Is Eclipse the "silver bullet"?



Overcoming the Challenges of Establishing Service and Support Channels

Observing the Big Players

Case Study 2 - Sun

- Open Source of Products + Free Products
 - Solaris
 - Star Office
 - Java
 - Java Enterprise
- PostgreSQL Announcement
 - Included in Solaris 10
 - Supported



Overcoming the Challenges of Establishing Service and Support Channels

Observing the Big Players

Case Study 3 - Google

- Clear Internet Leader
- Use of MySQL in adWords (90% of income)
- Contributor to Open Source

<http://code.google.com>



Overcoming the Challenges of Establishing Service and Support Channels

Observing the Open Source Players

- MySQL - Europe's largest FOSS company
- JBoss - Enterprise Middleware Suite (JEMS)
- SUSE – Now owned by Novell
 - China preferred Linux OS
- Ubuntu
 - Top Linux Distro 2005
 - Always free



Overcoming the Challenges of Establishing Service and Support Channels

You need a Home Team

- At least some resource(s) must have an understanding of your Technology Stack
- Handle Software Updates
- Handle Security Updates
- Places Business Interests Higher
- Keeps IT Business Knowledge inhouse

OVERCOME!

Value an internal resource in technology first, business second.



Overcoming the Challenges of Establishing Service and Support Channels

A Little Education

- Product and Technology Certifications
- The Google Test
- Product and Users Forums
- Local Meetings
- Read the Code
- Specialised Providers



Overcoming the Challenges of Establishing Service and Support Channels

Web 2.0

Design Patterns and Business Models for the Next Generation of Software

by Tim O'Reilly

1. The Web As Platform
2. Harnessing Collective Intelligence
3. Data is the Next Intel Inside
4. End of the Software Release Cycle
5. Lightweight Programming Models
6. Software Above the Level of a Single Device
7. Rich User Experiences



Overcoming the Challenges of Establishing Service and Support Channels

Web 2.0

Core Competencies of Web 2.0 Companies

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-recreate data sources that get richer as more people use them
- **Trusting users as co-developers**
- Harnessing collective intelligence
- Leveraging the long tail through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models, AND business models

"Applications are no longer software artifacts, they are ongoing services."

Christopher Alexander



Overcoming the Challenges of Establishing Service and Support Channels

Development/Support/Service Costs

- It's not possible to separate out.
- You need a budget each year.
- Do you value data or value knowledge?
- Are your systems essential for the organisation or just a benefit?



Overcoming the Challenges of Establishing Service and Support Channels

Who You Know - What You Know

- A referral is worth far greater than any amount of technology mastered.
- Aligning with others or networking is essential to increase referrals.
- Can you refer any type of business/organisation or individual?



Overcoming the Challenges of Establishing Service and Support Channels

Who You Know - What You Know

Who can you trust?

IDENTIFY!
Who can you trust?

- Can you rely on an independent, trustworthy authority?
- Can you test them? Can you randomly audit, in any substantial sense? Can you observe their behavior and performance or look at their reputation, their background, and their history over a long period of time?
- Do your vendors supply service-level agreements or warranties on their software and services?
- Do you rely on legal assurances which have some substantial backing, or just on empty promises from someone with empty pockets?
- Do you know, or can you find out, who the people you willingly trust are further trusting?

Source: "Who Can You Trust?" <http://www.cutter.com>



Overcoming the Challenges of Establishing Service and Support Channels

Other Help

<http://www.agilealliance.com> - Helping Agile Projects Start

- The Agile Alliance is a non-profit organization that supports individuals and organizations who use agile approaches to develop software. Driven by the simple priorities articulated in the Manifesto for Agile Software Development, agile development approaches deliver value to organizations and end users faster and with higher quality.

<http://www.go-opensource.org>

- Raising the awareness of open source software (OSS), primarily amongst non-specialist IT users. The message of the campaign is that of choice: the advantages of OSS aside, there is an overwhelming number of people who do not even know that this option exists and is accessible to them.

<http://www.flossworld.org>

- Free/Libre/Open Source Software: Worldwide impact study



Overcoming the Challenges of Establishing Service and Support Channels

Trial and Error Implementations

Significant opportunity to try before you buy

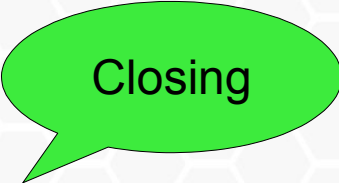
- Non Critical Impact Options
- Web Presence
- Blog
- News
- User Forums
- CMS
- Wiki
- Customer Support / Bug Tracking

“With technical skills and minimal specific technology experience, options can be installed in minutes to hours, and operational in days.”



Overcoming the Challenges of Establishing Service and Support Channels

Open Source Hurdles



Closing

- Too many companies right now raising money with the approach: 'We'll give it away for free and make it up in the back end with high volume services support revenue.'
- Complex and immature
- Lack of documentation
 - No contractual responsibility to provide
 - Without adequate documentation, projects starts inherently at a disadvantage
- Projects are made by programmers for programmers
- Technology remain foreign to the large majority of computer users
- Usability Problems
- Lack of studies for comparision with proprietry software
- Legal understandings



Overcoming the Challenges of Establishing Service and Support Channels

Conclusions

Closing

"So much to do, so little time."

- Choose your Database wisely (purchased/open source)
- Value resources in your business knowledge
- Minimise the Need (benefits of Agile approach)
- Consider Applications as services
- Continual budget for services

"Don't Use Open Source, Be Open Source"



Overcoming the Challenges of Establishing Service and Support Channels

For access to this paper, more detailed notes and other information, please visit.

<http://wiki.arabx.com.au>

