

Economic Justification for IT Training

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*Get on the
Fast Track!*



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Business Case for Training

- In order for a Fortune 1000 company, government municipality, healthcare provider, consulting firm or software company to arrive at the decision to schedule training for its IT professionals, there has to be an underlying economic justification.
- It is standard SYS-ED policy to work with the client to assess the format and training delivery medium in terms of both content and the underlying economics within budgetary, cost center, return on investment, and in certain situations profit center criteria.
 - At the client's discretion, pre and post course validation assessment can be utilized to quantify and measure the effectiveness of the training outcome.
- In the early 1980's, the rule of thumb was far simpler; two weeks per year of training for each DP employee.
 - The inputs, choices, and the decisions associated with utilizing IT training is far more complex in the 21st century.

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Economic Justification for IT Training

Reasons to Train - 1

- The business case for IT training translates into organization-specific operational objectives.
- Based upon our experience, common reasons to train are:
 - IT training for developing a skillset.
 - IT training in order to ensure mastery of subject matter; a de facto covenant for the employee to deliver satisfactory work and output back on the job!
 - IT training to promote the acceptance of new software and to improve employee and collective productivity.
 - IT training as part of a project assignment.
 - IT training to identify peak performers.

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Reasons to Train - 2

- Based upon our experience, common reasons to train are:
 - IT training in which the selection and proper utilization of software results in improved efficiency and greater throughput with the existing hardware infrastructure.
 - IT training in order to realize cost savings with open source software.
 - IT training as a component of research and development.
 - IT training as an actualization of the business model and strategic plan devised by management.
 - IT training as educational consultancy.

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Economic Justification for IT Training

Keeping Abreast of Trends and Updates in Technology

- IT training as a means for evaluating new/emerging technologies:
 - Open source software.
 - Software as a service.
 - "Green" initiatives and addressing issues such as data center power and cooling requirements and high-carbon-footprint products such as storage devices.
 - Evaluating/integrating new technologies with an IT infrastructure which in many cases was introduced and brought "on-line" - 30+ years ago.

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IT Training Within Multinational Organizations

- The implications associated with delivering IT training via the web to employees in a multinational organization.
 - Web-based training and delivery as a web service.
- IT training can be used for prototyping, modeling, and evaluating different software and hardware scenarios in dispersed physical locations.
 - Integration of hybrid enterprise databases, proprietary and open source development platforms, with mainframe operating systems and legacy programming languages.
 - Europe and Asia
 - Increasing use of UNIX variants as servers and workstations.
 - Asia and South America
 - Internetworking versus a Microsoft centric network.
 - Europe, Australia, and North America

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Economic Justification for IT Training

“Outsourcing” and “Insourcing”

- IT training is being used to ensure the proper balance between “outsourcing” and “insourcing”.
 - A significant degree of information processing has been outsourced over the past decade.
 - Many organizations have expressed a need to retain the capability to perform a portion of their own coding, debugging, and maintenance capabilities.
 - The bulk of the work can still be outsourced overseas or contracted to a third party - IBM or consulting firm.

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IT Training for Cost Reduction

- IT training on open source software provides the opportunity for cost reduction and strategic insurance against arbitrary changes in the product life cycle, licensing policies, and support services provided by software companies.
 - IT training for the evaluation of emerging technologies such as virtualization.
 - IT training as part of a flexible and programmatic strategic utilization of the investment in legacy programming languages.

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Open Source versus Proprietary Software

- Training and the commitment of resources (money and time) is required in order to acquire the knowledge and skillsets for utilizing open source software either in lieu of or in conjunction with proprietary software.
- The hybrid internetworking, scripting, databases, and development platforms make this a challenging task.

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Open Source versus Proprietary Software

- Web Servers:
 - Open source - Apache
 - versus
 - Proprietary software - WebSphere, WebLogic, Oracle Application Server, IIS
- Scalable Enterprise Databases:
 - MySQL versus DB2, Oracle, SQL Server
 - Data archiving across hybrid environments.
- Development platforms:
 - Java versus .NET

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Open Source Software for Business Professionals

- Business professionals may need to be prepared to work in hybrid environments which are becoming increasingly data centric and web-based.
 - UNIX server variants in lieu of Microsoft Windows servers.
 - Open Office and StarOffice versus the Microsoft Office suite.
 - Google Apps (software as a service) versus Microsoft Office suite.

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Operating Systems and Virtualization

- Since the 1970's the operating system has been the strategic focus for new technologies; however, new modes of computing, and infrastructure virtualization and automation are changing the architecture and role of the operating system.
- The Gartner Group projects that PC virtualization will increase rapidly.
 - Their research indicates that there were 5 million virtualized PCs in 2007; and projects that 660 million PCs will be virtualized by the end of 2011.

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Virtualization, Servers, and Infrastructure

- Server and PC virtualization is just starting.
 - The consensus of industry experts is that server virtualization will allow organizations to become significantly more efficient in the utilization of their existing infrastructure.
 - Data in the public domain indicates that the market for x86 servers fell by 4 percent in 2006; and the projections are that there will be 4 million virtual machines by 2009.

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IT Training for Grass Roots Evaluation and Soft R & D

- Traditional IT infrastructure orthodoxy is being challenged and changing.
- IT training is useful for exploring the underlying economic potential associated with virtualization:
 - Decrease in hypervisor prices and management costs.
 - Decoupling technology which breaks the dependencies between hardware and the operating system (e.g. machine virtualization) and between the operating system and applications (e.g. application virtualization).

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Legacy Programming Languages

- Given the investment in application development and infrastructure in IBM mainframe systems, IT training has to reflect management's short and long term operational strategies:
 - maintenance, migration, phased obsolescence, etc.
- Training on applications coded with legacy programming languages can be quite challenging:
 - COBOL, Assembler Language, PL/1, REXX, RPG, and C.

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Legacy Programming Languages

- The original design and coding was done 30+ years ago.
 - In many situations, this means re-visiting the original program design and documentation and interpreting/updating the program logic.
 - This type of training will in many situations require a degree of educational consultancy.

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Legacy Programming Languages

- Courseware and Training Aids
 - There typically will be a requirement to develop multi-tiered documentation, inclusive of validation assessments, which can be used both in traditional instructor-led classroom training and serve as a foundation/framework for utilization in a web-based delivery medium.
 - Moreover, given the scarcity of up to date text books on legacy programming languages, the development of superior documentation will be important for both the presentation of subject matter and reference:
 - Diagrams which explain.
 - Client-specific examples and sample programs.
 - Tailored workshops.
 - Validation assessment.

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Legacy Programming Languages

- There are demographic issues which need to be addressed as the first generation of programmers reach retirement age and there is a relative scarcity of qualified replacements being produced by the colleges to code and maintain legacy programming languages.

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Legacy Programming Languages

- Examples of Strategies:
 - Migrate to Enterprise COBOL.
 - Upgrade to new web-enabled versions of the programming language.
 - Modify the code and deploy system software to work with WebSphere MQ middleware.
- There will be a need to integrate new technologies and application development platforms (e.g. Java) with the IBM mainframe software.

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Effective IT Knowledge Transfer

- There are very few organizations which will have invested exclusively in a single software vendor: IBM, Microsoft, Sun Microsystems, or Oracle, etc.
- Effective training, requires that a professional training organization have a multidisciplinary skillset (mainframe, client/server, web enablement, Internet programming) and first generation hands-on experience with a variety of programming languages.

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