

The Total Economic Impact™ of Implementing Corporate Portals

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Giga Position

The growing popularity of corporate or intranet portals increases the risk that some organizations may adopt them without analyzing the full financial impact of the decision or without examining intermediate steps. Two major issues complicate portal financial assessment: (1) the lack of a common definition of what technology constitutes a portal often expands the investment decision to include other infrastructure, with IT balancing multiple decisions in parallel and (2) portal justifications tend to focus on qualitative, difficult-to-measure objectives that make future value and risk evaluation subjective. Since portal technology merges with the software application platform, it seems more likely that portals will become the primary means by which users will access business applications and content. As this evolution is still in progress, portal investments are risky in this period of change and consolidation.

Organizations should use Total Economic Impact™ (TEI) to analyze the financial impact of implementing a portal project today and compare it to other courses of action, like enabling remote application access or managing intranet content formally. This framework allows IT managers to determine whether elements outlined here are relevant to the organization and, if so, how to go about quantifying each element and building the business case for (or against) a portal implementation. If the result of the financial assessment is positive, then secondary analysis comparing vendor offerings should be undertaken. An impact analysis can benefit the organization by clarifying what the portal is worth to the business, the timing of portal investments and which risk factors must be addressed through implementation planning.

Proof/Notes

Many vendor offerings, limited market penetration, overlapping capabilities and immature implementations are characteristics of a persistent early stage portal market. Because product maturity and a common understanding of essential capabilities is lacking, portal evaluations often involve a complex set of criteria and multiple infrastructure software components. Also, because user adoption drives success, decisions to implement portals typically focus on soft, qualitative measures like productivity because hard dollar savings are not as obvious. These factors combined make it difficult to develop an analytic model to assess the value of portal technology and infrastructure decisions.

However, IT managers need a systematic way to evaluate portal projects broadly, beyond time saved and user satisfaction. The TEI model captures a more complete financial picture of portal investments by factoring in the ongoing future benefit of portal technology — and its underlying infrastructure — and the risks present in an emerging market. To outline this assessment, this discussion presents a non-exhaustive list of analytic factors exemplifying the issues that should be considered in developing a TEI for portals. After reading this document, IT managers should be able to evaluate the different elements of cost, benefit, flexibility and risk surrounding portal implementations and determine which apply to their business issues, or if there are others that may be more relevant. Using this road map, IT managers can estimate and attach a value to each element to both justify the investment and measure the success of the portal project after it is deployed. Without these numbers, it is virtually impossible to assess the portal's value after the fact. This process builds a business case that defines whether the organization should build or not build the portal and provides the opportunity to engage stakeholders and interested parties in a quantitative discussion of the business benefits.

Simply stated, the goal of TEI is to capture the business model for a portal in the following statement: “Implement a (name of the primary audience) portal to make (the business process related to this audience) better as measured by (observable, measurable metrics and key performance indicators) which is worth (calculated numeric value including future value and risk.)” TEI allows IT managers to develop this statement (with the supporting assumptions, calculations and proposed measurements), justify portal projects and plan intermediate steps that will achieve the same end but within different budget constraints or on an alternative time line.

Portal projects can become ambitious at the enterprise level, so TEI narrows the focus by comparing (at least two) potential courses of action. Organizations should start by comparing the impact of implementing a portal against simply improving or maintaining the status quo. At most, they should compare the portal to a project like consolidating internal sites with a Web content management system, a search engine or simple Web site design standards. Or they might assess the impact of Web-enabling a few key applications and linking them to a home page, while forgoing single-sign-on, role-based access controls and other potential portal capabilities. If the initial analysis proves that the portal project will deliver quantifiable value, then organizations can modify the TEI model to compare offerings from different vendors and determine whether a suite or best-of-breed approach is best for their situation (see Planning Assumption, [Total Economic Impact™: An Extension of the Basic Cost Model, Part 1](#), Chip Gliedman).

TEI of Implementing Portal Projects

This discussion addresses corporate or internally facing portals and starts by looking at costs. Because portal implementations involve a number of components, IT managers may find benefit to assessing certain infrastructure before the portal technology. Early infrastructure deployment can also mitigate risk and improve future options by addressing issues that make portal deployments easier as a consequence. TEI can help determine timing and priority of dependent infrastructure projects.

Costs

Infrastructure decisions, application integration and changes to business processes will complicate TEI assessments because each can involve additional intermediate steps. When assessing costs, organizations should concentrate on two key areas: (1) the costs over which IT has direct budget authority — listing other costs as “negative” benefit impacts to other business units and (2) a specific business process that serves one or two key audiences, defines the portal project clearly and reduces infrastructure issues to a minimum. To frame the impact of adding new technology like a portal to the IT infrastructure, organizations should project two alternative courses of action into the future and evaluate the portal implementation against the reasonable cost required to maintain or improve the status quo of the intranet. The following are examples of some key elements of cost that should be assessed as part of TEI. Organizations may find others to include as well.

Acquisition and Maintenance

Portal acquisition costs will vary due to both increased price competition and a wide variety of pricing options. As a high-level guideline, average sale prices range from \$100,000 to \$300,000 for a full-featured portal serving a few thousand users. Annual maintenance varies, but is typically 20 percent of initial license price before discount (see IdeaByte, [Portal Pricing Model Changes Signal Market Is Maturing](#), Laura Ramos.) Maintaining intranet status quo may require additional investment if the current intranet is disorganized and if users can’t find information easily. Therefore, the portal acquisition formula should include software licensing, maintenance (fees and manpower), implementation and training but also any offsetting costs required to keep the intranet “competitive” even if the portal is not selected.

Additional Infrastructure Considerations

Vendors bundle a wide variety of infrastructure software with their portal offerings. This complicates comparisons between the cost of adding infrastructure software to a portal implementation and the cost of maintaining the intranet. Today, portals favor native or tight integration with foundation infrastructure like

directory (for authentication and security), search, user management and application server infrastructure. Wider variation exists in capabilities for taxonomy and classification, Web or document management, application integration, portlet development tools and remote access.

To sort through these issues, focus on technology that already exists inside the organization first. Determine if the portal should integrate or replace any infrastructure. Base this decision on whether the infrastructure would be replaced irrespective of the portal decision. Then focus on the infrastructure that is missing entirely and include its acquisition cost in the assessment. Infrastructure decisions will be a multi-step process that involves many disciplines within IT. For many portal implementations, it will be necessary to balance business user demand for portal functionality now at the cost of staging or replacing certain infrastructure later on. These costs can be difficult to assess, but a good estimate would include design and programming IT resources needed to buy, change or re-implement infrastructure, the impact on IT projects deferred by this work and the depreciation or disposal costs of existing infrastructure.

Set-Up and Ongoing Maintenance, Including Personnel and Training

Whether they resemble applications or infrastructure, portals will require both implementation and ongoing maintenance that usually exceeds current intranet resource allocations. Tasks like portal framework design, user management, taxonomy design, content classification, application interface testing and content management all require part-time or dedicated resources. Since portals give users more access to applications and content, they also risk exposing poorly implemented processes or stale, disorganized content, which may include a combination of content management, policy and governance investment costs.

External Services or Sources (e.g., syndicated news feeds)

Many “free” sources of information or relevant industry content are available on the Internet or from user groups. While intranets also use these sources of information, a portal implementation forces a more rigorous assessment of these sources — and subscribed services — and can save costs through consolidation, better management or by negotiating a reduced rate through the portal provider. Many find that paying for premium, targeted, preclassified portal content saves IT management time and provides content that users benefit from reading. The value of the subscription may be greater when compared to the cost of harvesting and producing this content with internally licensed search engines, crawlers and classifiers.

Web-Enabling Existing Applications

Preparing existing applications to run inside a portal can cost between two and four times the initial acquisition cost of the portal. While keeping the number of applications exposed in the portal to a minimum will cut costs initially, decisions that limit architectural and programming choices will impact flexibility and could make the investment less attractive longer term.

Benefits

Benefits measured should be those that result directly from the implementation of the portal. To identify these benefits, focus on the unmet business needs of intranet users and the tangible worth that meeting these needs can deliver to the business. This is often difficult because organizations typically allow their intranets to evolve without a specific business case to support the ongoing cost. Meaningful benefits will show measurable change to the business processes and audiences addressed by the portal.

Gains in Productivity

User productivity, through better access to content, applications or other team members, is the most tempting benefit to focus on. Even if a consolidated user interface saves users time, it does not follow that users will put this time to productive use elsewhere. It is better to align the portal with a process where a few users save several hours a week by streamlining or eliminating a process — and save the hard dollars associated with these changes — than justifying a portal in terms of time saved per employee across the board.

Individual usage patterns vary greatly and a portal interface design cannot anticipate all requests. However,

attention to user interface design is still required to promote user adoption and streamline common interactions. For example, use search logs and click-stream data to find the most common queries or visited pages and promote these to a home or community page in the portal. Consistent interface design and navigation in the portal will foster predictable user behavior; so do not confuse users by changing interfaces often or by presenting too many portlet selections or options. Always-available information from the portal cuts down on training costs as well. Collaboration and knowledge management fostered by the portal can have unanticipated benefits.

Measuring benefits like these can be tricky unless a systematic design process, like human factors evaluation or usability testing, is employed or unless there is a very specific process that can be eliminated by moving it to the portal. For example, it is relatively straightforward to measure the time saved processing forms or paperwork by moving the form online and eliminating the paper. Measuring how people perform tasks will alter the task somewhat, but baseline numbers like number of users, number of access sessions and time spent on an activity (like filling out a form) are good examples of productivity measures to investigate.

Consolidate IT Resources and Services

Many organizations find their intranets awash with Web sites and network servers. Several large organizations report system and resource savings in the millions of dollars when they consolidated Web sites and servers by using a portal to administer users and manage the UI and content. The sum of the people, hardware, software licenses and fees released per system consolidated is a reasonable way to measure this benefit.

Decrease Content or Service Delivery Costs

Substituting an electronic channel or process for a more expensive medium can save considerable costs in printing/publishing, distribution (mailing, shipping) and network traffic. Other savings in training, travel and error reduction from streamlining processes are candidates for measurement and improvement. The formula for measuring benefits in this area will include time, media and personnel savings as well as expenses avoided.

Extend Reach of Back-Office/Enterprise Applications

Portals can make available the most frequently accessed parts of applications to the majority of the population through a Web-based interface. Enterprise resource planning (ERP), sales automation, business intelligence (BI)/reporting and customer relationship management (CRM) applications benefit from extending the typical 20 percent of the application that 80 percent of the users need in a portal that is simpler to use and dedicated to the specific function. Measure the benefit of extending enterprise applications in terms of time and personnel saved by eliminating the need to install and manage dedicated clients on desktops and to conduct user training. Because the application is (theoretically) easier to use, some amount of help desk or IT support calls will be eliminated as well.

Reduce Intranet Coding and Maintenance

Portals provide frameworks and customizable templates that reduce the amount of HTML coding required to design and publish simple Web sites for departments or communities of users. Some portal vendors offer tools targeting business users and relieve them from writing code since the tools help them create simple database or business application portlets. Business analyst tools can positively reduce demand on Web site managers and development/programming resources as well as enable business units to be more self-sufficient. Measurements here can be subtle but should include deferred or eliminated projects and personnel that would have to be staffed separately if the business units did not have the portal tools to accomplish the coding and maintenance on their own.

Delegate Administration

While there may be an initial negative benefit as the distributed managers learn their delegated tasks and develop community and departmental pages, portals make it easier for departments to administer users and to enable communities to work together online. With a portal, Web masters can focus on the overall navigation

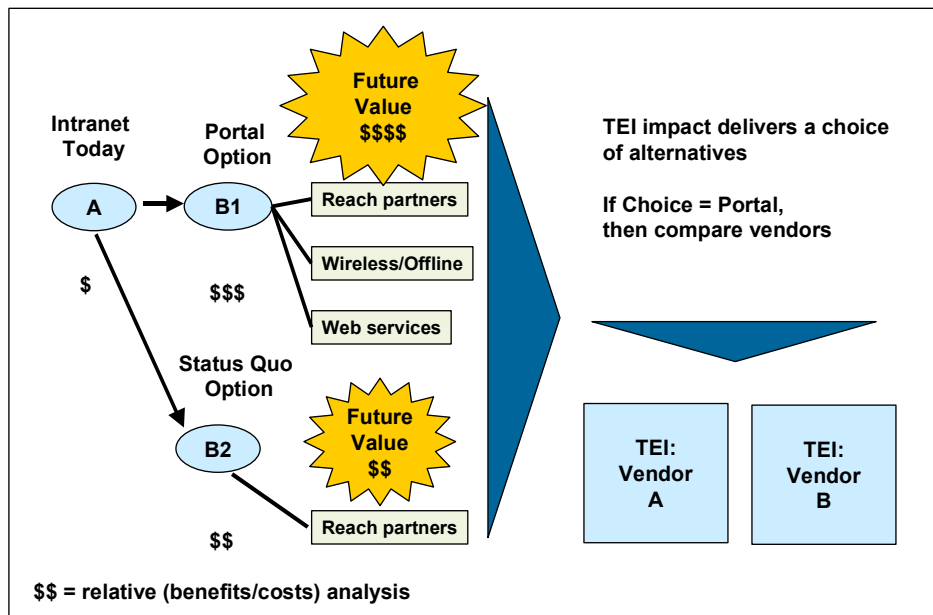
and layout/template design and give business units autonomy over the content and applications accessed on their own portal pages. Business users also have the ability to grant users access without involving IT in the request. Headcount released or avoided is the main measurement to focus on here.

Flexibility — Future Options Created by Portal

Portal projects need to account for the deferred or potential benefits that secondary portal projects can achieve. The TEI model factors in the flexibility that portal technology gives IT to plan for and implement future capabilities, an area where most corporate portal — and intranet projects in general — deliver value. Because portal infrastructure can support a wide variety of follow-on projects, the temptation is great to try to put the majority of the infrastructure in place first, which can lengthen project timelines. This risks increasing user frustration as departments wait for portal implementations or find that the “intermediate” milestones are of little value when compared to the expectations previously set. For example, an employee portal that promises individual customization over content and applications will be disappointing if the portlets to support external news sources, financial investment information, community of interest sites or business applications like benefits or stock administration are not available in the first release.

To justify portal implementation plans, TEI demonstrates how intermediate steps can deliver business value by comparing the cost/benefit/risk of different alternatives. The figure below shows a simplified decision tree that highlights the importance of comparing a portal implementation against another alternative. While the cost of maintaining or “fixing” the intranet may be smaller and the benefits similar to the portal, the added advantages of implementing future options like wireless support for remote users and the flexibility provided by the eventual use of standardized Web Services can explain concretely why initiating a portal project now may deliver benefit in the future (see IdeaByte, [Investing in Enterprise Applications in Tough Times: Portal Paybacks](#), Laura Ramos.) The following are some factors to consider when assessing flexibility.

TEI Flexibility Assessment for Portal/Intranet



Source: Giga Information Group

Support New Applications or Reach New Audiences

The portlet model can allow IT to quickly add new functionality, or extend existing applications, through a standardized user interface and Web-based protocols to either a Web/application server or a remote service.

When assessing the value of this capability, be careful to avoid restricting the functionality of the underlying Web site, application or service since there are some applications that do not translate easily to a browser-based interface. This caution is clear to anyone who has used the **Microsoft** Outlook client and compared it to its Web-based counterpart, Outlook Web Access. Lessons learned by experimenting with internally facing applications will help portal managers extend content and business applications outside to partners, customers and prospects faster. The value of flexibility in supporting new applications can be measured by comparing the cost to develop the application separately against the (reduced) time, personnel and expenses needed when leveraging the portal to develop or extend the application.

Modify Back-Office Applications With Less Impact to Users

Portals can help postpone investment in upgrades or the redesign of back-office applications. While this is not recommended as a general course of action, a portal can provide a bridge to the next release by augmenting the existing release with portal functionality like Web-based interfaces, access controls or single sign-on. In this way, portals can also extend the life of legacy applications, provide a platform for standardizing the interface, or allow access to applications with disparate interfaces. Because portal interfaces are browser based, the impact of changing client applications on user desktops is decreased greatly. Portals can make user interfaces more consistent between releases as well. Here again, measure the value of this flexibility in terms of deferred or avoided costs by using the portal instead of maintaining the status quo.

Extend to Wireless or Offline Users

While most portals tend to support wireless users as if they were operating over a wired network, technologies are emerging that give remote users a higher quality experience either by providing remote access to a collocated server or by downloading portal content to the remote machine and pushing/pulling only the incremental changes in content or applications when network connection is restored. This is an area of future investment many portal implementers should consider as their workforces become more mobile. Measured value may include the avoidance of mobile or remote network and support costs, which can increase dramatically as the workforce becomes more geographically dispersed.

Hedge Against Rapidly Changing Application Offerings (Web Services)

Similarly to modifying back-office applications with minimal impact, portals can help insulate users from rapidly changing applications or services. One area where this could become significant is Web Services. Portals will become a primary consumer of Web Services. While not a significant factor today, the interest in Web Services and their ability to standardize remotely delivered services is growing. Organizations should factor their future plans for Web Services into the assessment of portal flexibility and plan to measure how Web Services can reduce and avoid additional application development by leveraging existing services across multiple applications.

Risks

The numbers attached to portal cost, benefit and flexibility analysis are subject to a set of assumptions like rapid user adoption, ongoing vendor viability, product or standards maturation and successful project implementations. If assumptions like these prove false, then the cost required to mitigate these risks must be factored into the assessment. The assessment should evaluate the budget and resources needed to counteract a negative outcome or recover from an unanticipated issue in the event the assumptions do not come true. Since the portal market is subject to consolidation and change during the next 12 months, close attention to vendor viability and product maturity — as demonstrated by real implementations — are the two key risk assessments (see Planning Assumption, [Market Overview: Enterprise Portals](#), Laura Ramos).

Users Fail to Adopt Portal

Adoption rates can be affected by a number of conditions, many of which may have nothing to do with technology. Carefully assess assumptions about corporate culture, incentives, motivations and communication to determine whether there are risks to user adoption outside of a well-executed implementation plan. Depend on business counterparts within primary audience departments to help with this

assessment (see IdeaByte, [Encouraging Users to Adopt and Customize the Portal](#), Laura Ramos.)

Vendor Viability

Pure-play and non-platform vendors are subject to competitive pressure as the large enterprise vendors market their portals aggressively to their installed bases. Consolidation and acquisitions are anticipated that could put vendor viability into question quickly. Even among the large vendors, questions still exist as to their level of commitment to portal technology or whether these vendors are simply engaging in the current market hype. To mitigate vendor risk, plan contingencies like federated portal architectures that can support products from disparate vendors if necessary and standardize user profiles format and interfaces so that changes can be made quickly with a minimum of disruption.

Product Maturity and Maturing Implementations

Pioneers in this market will become battle-worn but sage reference studies during the next 12 to 18 months. Assessing organizational comfort with the transition from pioneer to early majority is another important element of risk analysis. While the technology has matured significantly in the last 12 months, the number of implementations has not, and the amount of time-tested advice from peer organization is still lean, so careful assessment of risk factors associated with immature implementations is required.

Failures in Project Execution (Budget, Scope, Rollout)

Portals are no different than any other major IT infrastructure project. Techniques for assessing and planning contingencies against project execution failures are important, but a fairly standard, well understood process.

Application Integration More Difficult Than Anticipated

This area is of growing importance since portal implementations are moving from content and application aggregation to wide-scale integration. Developer and workflow design tools, tighter application server integration, support for message-based middleware and enterprise application integration (EAI) software partnerships can all help streamline application integration work, but this area continues to contain significant challenges and risks. Consider involving outside systems integrators or experienced consultants to help assess — and later implement — application integration requirements.

Standards Fail to Evolve

Outside the growing use of Extensible Markup Language (XML), Simple Object Access Protocol (SOAP) and Universal Description, Discovery and Integration (UDDI), there are a small number of committees commencing work on standards for portlet interoperability and distributed access. In particular, JSR 168 and the OASIS Web Service Remote Portals (WSRP), driven mainly by the vendor community at this point, are in the process of nominating standards and reference implementations. While practical use of these standards is still two to three years away, significant resources are being dedicated to these efforts and a positive outcome is anticipated. As these standards evolve, understanding which vendors are driving the standards vs. merely participating will help organizations anticipate how the standards may evolve and how to plan for them. Eventually standards will help to mitigate risk with portal implementations, but, for now, they are too far off to be of significant help.

Using TEI to Compare Vendors

The TEI framework for portals can be modified easily to compare vendors, although vendor evaluations should not proceed until the financial impact of the portal project appears to justify the expense and effort. Whether a broad enterprise portal implementation or smaller projects under intranet improvement are chosen, portal product assessments can leverage the TEI model to help determine objectively and systematically which vendor offers the solution with the highest value. Unlike simple cost/benefit analysis, TEI may show that a higher cost vendor delivers a better value due to increased flexibility of future portal options or decreased risk when compared to a lower cost alternative. Risk factors should focus on vendor viability and sound proof of prior implementations. Flexibility should account for whether any vendor's products are already present in the organization and how to leverage the prior relationship to save hard dollars through

existing discount structures or soft dollars due to an existing experience base and decreased learning curve. Familiarity and comfort with a vendor or its products can have significant impact on both development cost and flexibility options with portal projects and should not be overlooked.

Alternative View

The position that the growing popularity and diversity of portals offerings subjects IT to undue risk without some way to analyze the full economic impact is based on the assumption that, unless focused on specific users, processes and metrics, portals will fail to deliver significant business value. Given current economic conditions, businesses must justify these investments in light of how their IT budgets could be spent elsewhere.

However, because a number of established, stable software vendors are aggressively marketing new or significantly improved portal products, a strategic alignment between an established platform vendor and the business strategy carried out by the portal may be strong enough to warrant using the incumbent's portal without further justification. Therefore, the next most likely alternative is that portals will become widespread without requiring separate financial justification, as they are subsumed into the middleware stack of some larger offering. As a part of the application infrastructure, portals will not require extensive economic impact assessment of their own since they will simply become the de facto method for providing access to content and applications. This scenario may become more likely as Web-based applications and content becomes predominant in intranets, fueled by Web Services standards adoption, where portals eventually become tools simply for customizing user interfaces and managing user access profiles.

Findings

Portal evaluations include a complex set of criteria and can involve multiple software components. Despite this, they are not typically justified on hard dollar savings because soft, qualitative measures seem more obvious. Financial impact modeling is essential to prove portal payback since portals offer greatest benefits in terms of future flexibility options, which are harder to justify when budgets are tight.

The business model for a portal should focus on a specific audience, how they will use the portal to make a business process better — measured by observable metrics and key performance indicators — and that is worth some tangible value assessed via a combination of cost, benefit, risk and future options calculations.

Should TEI analysis prove that portal projects have a high likelihood of delivering value, organizations should then proceed to use TEI as an element of assessing vendor portal offerings. Portal infrastructure deployments undertaken before portal frameworks are put in place will help to mitigate risk and improve future options, but caution must be taken to avoid the temptation to deploy all infrastructure before the first portal goes live.

Unique cost assessment criteria for portals include providing for additional infrastructure, subscribing to external sources of premium content and the development or implementation of Web-enabled applications.

While user productivity may appear to be a credible benefit at first, IT managers should look for hard dollar savings to assess portal benefits instead. Metrics related to the consolidation of IT resources and services, decreased content or service delivery costs, extending the reach of applications, reducing intranet coding and maintenance and delegated administration should be of primary focus.

Flexibility options assessment includes supporting new applications, modifying back-office applications with less impact to users, extending to wireless or offline users and providing a buffer between users and rapidly changing application offerings.

The most important risk factors in this market are vendor viability, a lack of maturing implementations and the potential for users to fail to adopt the portal widely.

Recommendations

Organizations analyzing potential investment in portals should use financial analysis models like TEI to structure a formal or informal analysis before selecting vendor technology.

TEI can objectively and systematically determine whether a portal project is justified across a broader range of business values other than cost and expected benefit. IT managers who suspect portal technology will have benefits to their organization but who are having trouble justifying a concrete business case will find that TEI allows them to quantify what were formerly hypotheses or hunches.

In some cases, intermediate steps — like the use of a different technology, implementing new process steps or setting new guidelines outside of a technology investment — can justify portal project value if the full budgets and resources to support a portal project are insufficient. Organizations should not overlook mid-term milestones as a way to deliver some of the expected value early and to help to justify further portal investment.

Conversely, TEI can help organizations justify making portal expenditures sooner by showing that the future value of the portal infrastructure and development effort is positive and the risk mitigated.

Organizations should also leverage their TEI model to objectively and systematically evaluate vendor offerings once the decision to move ahead is approved.

References

Related Giga Research

Planning Assumptions

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