



Whitemarsh
Information Systems Corporation

Return on Investment (ROI)
Information Systems Planning

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Whitemarsh ROI Savings Summary

Information System Plans (ISP) are essential to a well-ordered multi-year IT strategy for the enterprise. That said, the traditional strategies for developing ISPs are a profound disappointment.

Traditional techniques and strategy developing and evolving enterprise-wide Information Systems Plans take 16 to 25 staff years. Additionally, the traditionally developed ISPs do not exhibit the critical characteristics of timeliness, usability, maintainability, quality, and reproducibility.

Whitemarsh strategies and techniques, the development of Information Systems Plans can be efficiently and effectively created that not only exhibit the characteristics cited above, but also can be created almost six times faster than through the traditional approach. The Whitemarsh ROI for Information Systems Plans is 5.9.

Supporting Links	
Link Area	Link
Enterprise Data Management Areas	http://www.wiscorp.com/roi_businessinformationsystemsplanningenterprisedatamanagementar.html
The Data Administration News Letter Articles	http://www.wiscorp.com/roi_businessinformationsystemsplanningtdan.html
Short Papers	http://www.wiscorp.com/roi_businessinformationsystemsplanningshort_papers.html
Clients	http://www.wiscorp.com/roi_businessinformationsystemsplanningclients.html

1.0 Issue

Business Information Systems Plans (ISP) are essential for any well-ordered enterprise. It is not uncommon for a business information system of import to the business to take very significant resources in terms of money and time.

The basis for dimensioning this issue and for the computation of traditional approach costs and changed approach costs and finally the determined ROI is based on a “rule of thumb.”

The size and cost of a business information system is based on the count the quantity of third normal form database tables, which is then multiplied by 80 to get the total of function points. That result is then multiplied by the function point cost, which can range from \$200 to \$400



(depending on the mode of traditional implementation) to get a ball-park estimate for the business information system.

Thus, if a database has 200 tables, the function points is 16,000, and the ball-park cost, at \$200 per function point, the cost of a single business information system is about \$3.2 million.

Many enterprises have 20 to 50 major business information systems. Thus, the total implementation cost of just the business information systems inventory is about \$64 million.

Given that this is not a small amount of enterprise resources, which business information system should be done first? Which leverages the other? What role does an enterprise data model play? How and what kind of business drivers are important in determining the sequence? How can you develop an information systems plan in an efficient, cost-effective, repeatable, and maintainable form?

Traditionally developed business information systems plans as set out by the IBM, James Martin, and Clive Finkelstein approaches are all very laborious. That is because each approach contains steps that require between 30 to 40 thousand staff hours over multiple calendar years.

These traditional approaches would, if having no information systems plans were analogous to a disease, have the patient die from the cure well before the disease.

The three major components of these approaches is the construction of fully attributed third-normal-form data models, a fully developed, enterprise-wide detailed function model, and a full cross reference between these two models in terms of Create, Read, Update, and Delete (CRUD).

While each is important during the development of actual business information systems, they are profound over-kill when planning for the sequence and cost of business information systems. The Whitmarsh paper, *Engineering and Managing Information Systems Plans*, set out the traditional approaches, their costs, and the very significant drawbacks.

2.0 Solution Approach

The Whitmarsh approach is accomplished in the following way:

- Develop a third normal form enterprise data model that is constructed but only at a high level without detailing all the attributes for the thousand or so entities. Such a data model can be done quickly, and if based on Missions and Database Domains is likely to stand the test of time.



- Develop a Resource Life Cycle model that sets out the enterprise's resources and for each resource, their life cycles including precedence vectors between appropriate nodes from the different resource life cycles. Such models automatically support Resource Life Cycle dependancy charts and present business information system and database design, build, and evolution completion sequences.

The Resource Life Cycle approach, developed by Ron Ross, is almost always correct when compared with the traditional ISP approach function model because a detailed function model is based on the rigid and detailed determination of human processes that are always fraught with error and continuously require changes. These required changes almost always, in turn, require significant changes to an already built information systems plan.

- Allocate existing databases and business information systems to the various resource life cycle nodes.
- Identification of multi-node business information systems should be refactored into single node business information systems.
- The generation of precedent-based sequences for designing, building, deploying and evolving databases and business information systems.

3.0 Solution Engineering

The solution is engineered through the inclusion of a highly engineered data model within the Metabase System that enables the capture, interaction, and evolution of the key data required to then put forward a reliable and repeatable Information Systems Plan. Included in the development, execution, and evolution of ISPs are Metabase System components for:

- Enterprise Data Models
- Database Object Models
- Resource Life Cycle Analysis
- Business Information Systems models
- Project Management

Enterprise Data Models. The development of the enterprise data model is based on database objects that in turn are based on data element models and database models. Once developed, the database objects are able to easily associated with Resource Life Cycle Nodes. Once allocated,



there is sufficient information to know the database object, and in turn, database support of the Resource Life Cycle Nodes.

Database Object Models. Database object models are defined through four components:

- The interrelated database tables that form the data structures for database objects.
- The process specifications that control the data integrity of the rows of data for each of the database object assigned tables.
- The various database object life cycle states begin with the null state and proceed through the various states of valuation and ultimately return to the null state when database object instances are removed from the database.
- The specifications of the database object state information systems that specify what must occur to transform a database object instance from one state to the next.

Because subset collections of the database objects are allocated to the resource life cycle nodes, there exists an extremely obvious and simple way of determining ball-park estimates for business information systems development.

Resource Life Cycle Models. Resource Life Cycle data models that include Resource Types, Resources, Resource Life Cycle Nodes, Resource Life Cycle Precedence vectors, associated database objects, associated business information systems, and finally the associations with the information needs of various enterprise missions that are accomplished through the execution of functions from within designated organizations.

The Resource Life Cycle model becomes the business infrastructure backbone, which supports gap-identification, and also the instantly obvious business information system development sequence. This business-basis information system development sequencing step is mission from the three traditional approaches.

Business Information Systems. The development of high level specifications of business information systems that are more than sufficient evidence necessary to validate the accomplishment of their associated Resource Life Cycle Nodes. Associated with the business information system specifications are both the business event cycles and calendar cycles through which the enterprise's activities are accomplished.

Project Management. Certainly, the development of an Information Systems Plan is a "Bet your business effort." More importantly, the development of the plan is only the very first step because it is the execution of the plan that is vitally important. Consequently, as the plan is



executed, the management of the various projects must be such that the work products are integrated, interoperable, and non redundant.

Additionally, because the various project plans are “data” stored in the Metabase System, and the work products produced through ISP plan executions are also just data stored in the Metabase System, then there can be rapid reaction to any of the inevitable changes needed in the information systems plan. After all, only unexecuted ISPs are perfect.

Once the steps of the Information Systems Plan process are accomplished, the resulting business information systems plan is timely, useable, maintainable, of high quality, and reliably reproducible. It was because of the lack of these very characteristics that the three traditional methods for Information Systems Planning failed and the whole effort fell into disuse.

4.0 The ROI

4.1 Traditional Calculation

The three alternatives to the Whitmarsh ISP approach: are IBM, James Martin, and Clive Finkelstein:

- The IBM approach has 13 different steps and based on an analysis of a prototypical example is estimated to take 44,432 staff hours.
- The James Martin approach, called Strategic Data Planning is set out over 16 steps, and based on the same prototypical example is estimated to take 32,130 staff hours.
- The final alternative, from Clive Finkelstein is called Strategic Management Planning is set out over 12 steps, and based on the same prototypical example is estimated to take 45,570 staff hours.

At an estimate staff hour cost of \$100 (fully loaded internal rate), the cost for IBM’s approach is \$4,443,200. The James Martin approach would cost \$3,213,000. The Finkelstein approach is estimated to cost \$4,557,000.

4.2 Changed Approach Calculation

Most importantly, the steps in the Whitmarsh Information Systems Plan effort, when estimated against the same prototypical example is estimated to take 5,392 staff hours. The cost estimate is thus \$539,200 That’s just 16.8% of the most efficient of the three traditional approaches, which,



when done do not exhibit the essential characteristics of timeliness, usability, maintainability, quality, and reproducibility.

4.3 ROI Summary

In short, a reduction in the effort by 83% and the generation of an information systems plan that is immediately usable, serves as a critical infrastructure component of the enterprise IT infrastructure, and is able to be modeled, changed and re-modeled is has a very high ROI.

The actually determined ROI is thus, 5.9.

