

Data Warehouse Newsletter #1

Cost Benefit Analysis

And

Business Benefit Realisation

Version 1.0

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1. **CHANGE CONTROL LOG**

#	Date	Name	Description
1.0	16/10/02	P. Nolan	Initial publication to the web.

2. AUDIENCE

The intended audiences for this Newsletter are:

- Business Managers in Marketing, Sales, Finance, Actuarial and Distribution functions of Banking and Insurance Companies.
- Business Managers in other industry verticals, such as telecommunications, where the same principles can be applied. Unfortunately it is very hard to write 'one newsletter fits all' and the majority of my experience has been in Banks, Insurance and Telcos.
- IT Managers responsible for Data Warehouse Initiatives.

3. EXECUTIVE OVERVIEW

"It may almost be time to replace location, location, location with database, database, database."

Rapp & Collins

"We are living through a shift from selling virtually everyone the same thing a generation ago to fulfilling individual needs and tastes ... by supplying ... customised products and services. The shift [is] from "get the sale now at any cost" to building and managing ... databases that track the lifetime value of your relationship with each customer."

Tom Peters

"Mass markets are fragmenting into micro-markets; multiple channels of distribution are replacing single channels...The winners are those who carefully analyse needs, identify opportunities and create value-laden offers for target customer groups that competitors can't match."

Philip Kotler - Marketing Management

The competitive environment in which Banks and Insurance companies operate is strongly reflected in the comments made by the above management and marketing experts.

This newsletter concerns itself with the issue of the Cost Benefit Analysis for investing in a Data Warehouse. If you do not believe that a Data Warehouse is a necessary part of the business landscape and are 'a priori' justified, I invite you to, please, read on.

Thank You.

Peter Nolan

4. CONCLUSIONS

This paper draws the following conclusions:

- The benefits of implementing a Data Warehouse can be broken into cost reductions and profit/revenue enhancement. The ratios are approximately 25% cost reduction and 75% profit/revenue enhancement.
- Cost/Benefit justifications for a Data Warehouse purely based on cost reductions ignore 75% of the possible benefits.
- Cost justification for a Data Warehouse based on revenue enhancement are far more likely to deliver a sustained competitive advantage and up to 75% of all benefits.
- A popular approach to cost justify the first Data Warehouse is to run short, focussed projects on 90-120 day timeframe and deliver a 'winner' every 90-120 days.
- A common approach is to run multiple marketing campaigns using the Data Warehouse because of the very short term return on the investment.
- The most compelling justification for a Data Warehouse is to leverage and monitor an organisations' investments to ensure maximum return on investment. This applies to both the cost reduction and the revenue enhancement benefits.
- Numerous case studies in many companies have shown over and over again that a well built Data Warehouse is overwhelmingly cost justified.
- "Having a good Data Warehouse is no longer a competitive advantage, it's mission critical - you have to do it. If you don't, you're going to fall behind."

Meta Group Feb 1996

5. THE PROBLEM

The problems with performing a Cost Benefit Analysis for a Data Warehouse are:

1. Frequently the benefits are not known prior to building the Data Warehouse.
2. There have been a number of iterations of 'using information for profit improvement' which have not worked out as advertised. (Executive Information Systems, Management Information Systems etc. have developed something of a 'bad reputation'. Similarly the Data Warehouse is developing something of a similar reputation given the number of 'failures' being reported.).
3. If the benefits are somewhat known they are often not easily quantifiable.

As a business manager you may be able to think of many other objections to investing money in an IT system that claims to provide you with a competitive edge. You may well have experience of IT projects that have promised much more than they have delivered.

My opinion is that the people working in IT business has been a significant contributor to the creation of this perception. I have seen many people on many projects making mistakes that are so simple as to be astounding. I am constantly surprised at the creativeness of IT people in finding new ways to mess up projects.

6. DISCUSSION ON THE PROBLEM

One may well ask, "Why are the benefits not known and not quantifiable?"

The major business benefits from a Data Warehouse come from decisions based on the information at hand. These decisions may/may not have been made in any case. Also, once the decision is made one does not usually have the ability to determine what might have happened had the decision not been made. With every successful decision made by using data from a Data Warehouse there are people who will claim that the Data Warehouse "didn't make the difference".

Given that it's not actually possible to know what the improvement will be, many people perform the Cost Benefit Analysis in one of two ways:

1. Define the Cost Benefits in terms of cost savings.
2. Define the Cost Benefits in terms of revenue/profit improvement.

7. COST BENEFITS BASED ON COST REDUCTIONS

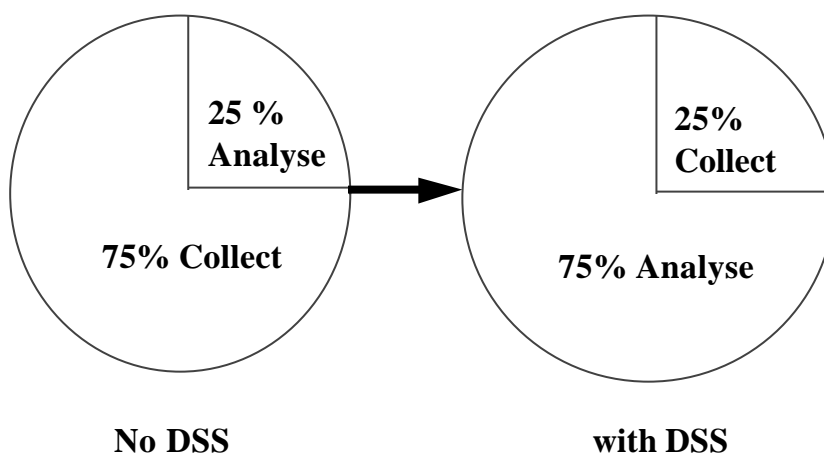
"Numerous studies have shown that professional employees spend about 60 per cent of their time looking for data, reformatting data, re-keying data and transferring data files. In other words, they spend three days of every five day week doing clerical activities - all related to accessing data. They spend another 20 per cent of their time on vacation, holidays and training. This leaves a final 20 per cent - just one day per week - to carry out the job they are actually employed to do."

Page 43, CFO Magazine, July 1996.

Though this quote is old, I do not believe we have improved much over the last few years. It is generally still very hard to gather together and reconcile information in an organization with no data warehouse.

Given the very high level of re-work and 'data gathering work' that is done in most large organisations it is perfectly valid to define Cost Benefits in terms of Cost Reductions. The normal benefit is that the productivity of the most valuable 'knowledge workers' in the organisation approximately triples.

Consider the chart below:



Studies have shown that a knowledge worker can spend approximately 75% of his/her available working time collecting data and only 25% of his/her time analysing data. Experience has shown that once a Data Warehouse is put in place the same knowledge worker spends only 25% of his/her time collecting data and 75% of his/her time analysing this data. This is typically a three times productivity improvement of some of the most talented and time constrained people within an organisation.

Thus, based purely on the ability to leverage increased productivity of knowledge workers one can justify the investment in a Data Warehouse.

Even though a Data Warehouse can be effectively cost justified using productivity improvements and cost reductions there are some issues with this:

1. Only 25% of the Data Warehouse benefits come from reduced costs.
2. Looking for cost savings generally means doing the same thing faster and cheaper. If you, as a business manager, focus on the cost savings you run the risk of building the same system you have today, only slightly cheaper and faster. This does not provide you with a significant competitive edge because everyone else is building a Data Warehouse.
3. IT Projects generally run over schedule and over budget (fighting words to an IT manager, however, every survey ever done repeats this finding) so a great cost benefit at the beginning of the project will look slightly weaker at the end of the project.

If you, as a business manager, ask for a Cost Benefit Analysis based on doing the same thing cheaper and faster and the project runs over at all, then it is extremely difficult to realise the expected benefits. And any new case someone comes up with could well be argued down as being 'possible' before the Data Warehouse was implemented. We have seen a whole generation of Executive Information Systems suffer this rather inglorious fate.

You can rest assured that doing the same thing faster and cheaper will not provide you with any long term competitive advantage. In today's business there needs to be something more, something different, something that others can't immediately copy. This is covered in the next section.

8. COST BENEFITS BASED ON REVENUE/PROFIT IMPROVEMENT

If you are a business manager in a financial services company you are probably intensely interested in revenue and profit improvement. For what other reason would your company and your role within your company exist but to produce revenue and profit?

How can you continue to compete and be profitable when it seems your competitors can always copy what you do? How can you differentiate your product without having to slash your profit margins by giving large discounts?

What do you have, in your business, that can provide you with a sustained competitive advantage that none of your competitors can copy? What do you own, that no competitor has access to, that can be turned into a 'Profit Engine'?

The answer? Your customer information. The computerised data of who your customers are and how they interact with your organisation. The time, effort and money that your business has invested in computer systems to manage the business can deliver handsome returns by using your customer data in a Data Warehouse that performs Marketing Analysis.

By using data about your customers, how they interact with your company, the products they purchase and the services they use in a Marketing Analysis System you can develop targeted marketing and servicing campaigns that will generate much higher levels of profit.

You may have heard the truism in marketing "I know half of my marketing budget is wasted. I just don't know which half." A good Marketing Analysis Systems will tell you which half. How would you like to Double the Effectiveness of your Marketing Dollar?

When performing a Cost Benefit Analysis for a Data Warehouse it is frequently much easier to cost justify a Marketing Analysis System that contributes revenue and profit directly to the bottom line.

Experience has shown, and many various reports confirm, that selling a product to an existing customer is at least five times less expensive than selling the same product to a new customer. My experience has been that it is up to ten times less expensive to sell the same product to an existing client than to a person on an external mailing list.

Thus the second way of performing the Cost Benefit Analysis for a Data Warehouse to perform Marketing Analysis is as follows:

1. Determine the amount of incremental revenue and profit generated by all marketing dollars spent within the organisation. This may be impossible apart from a 'guess'.
2. Double that incremental revenue and profit.
3. You will have your approximate benefit for your Data Warehouse for Marketing Analysis.

Some companies have reported much higher impact than doubling the marketing dollar effectiveness. One of the most famous public cases is Nynex, a New York telephone company.

Nynex held their marketing dollar spend level; invested in a Data Warehouse for targeted marketing from the regular marketing dollars and performed numerous targeted marketing campaigns using the existing levels of expenditure.

The result: Over the first two years of operation Nynex estimated the incremental profit generated by using the Data Warehouse was \$US80M. That's **\$US80M** in **incremental** profit. This meant that the large investment that Nynex made (\$US15M at the time) was paid back five times over in the first two years of the project life.

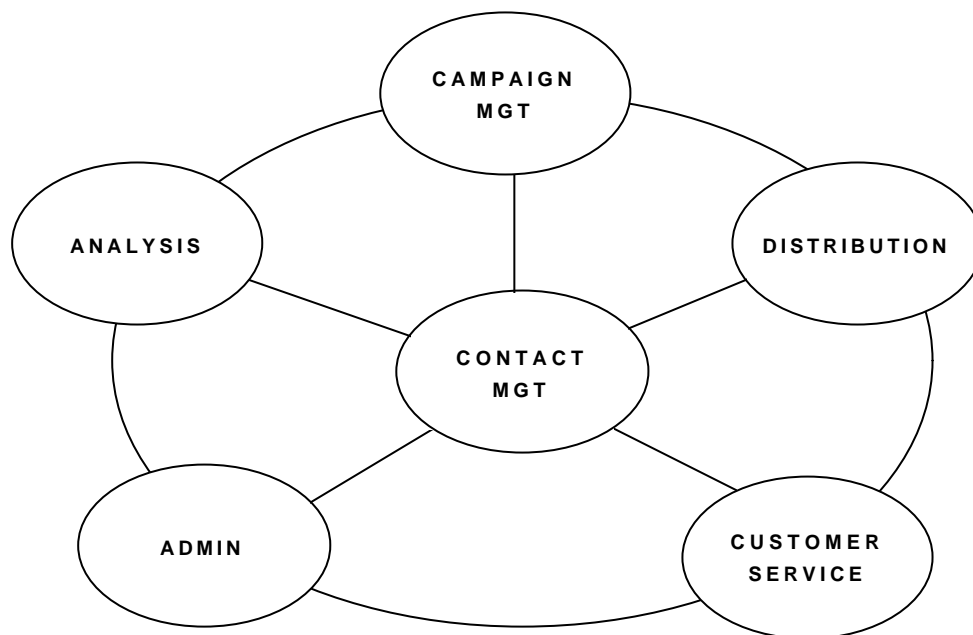
One executive of Nynex was heard to say at a conference, "The reason we have only spent \$US15M on our Marketing Data Warehouse is that we do not have the people capacity to spend any more money or we would. For every dollar we put in, we get four back, and we are at the people limits of the programs we can run."

The way in which a Data Warehouse for Marketing Analysis works is depicted in the chart on the next page. All data about the customer, the products and all customer transactions and interactions are recorded and integrated into a single view of the customer. This information is enhanced with demographic information so that you can better understand your customers and prospects.

This type of Data Warehouse delivers the other 75% of your benefits and provides you with a competitive advantage with which to ward off competitors as well as competing for new business. After all, the more you know about your customers and the better you can identify high value prospects, the more effectively you will be able to retain customers and compete for new customers.

The best part for you as a business manager is that no matter how hard your competition tries, they will not be able to replicate this Data Warehouse because it is based on something your competitors do not have access to. Your customer information. However, many of your competitors are, at this very moment, building Data Warehouses for Marketing Analysis in an effort to steal away your customers before you establish an unbreakable relationship.

9. **MARKETING ANALYSIS DATA WAREHOUSE**



In a Marketing Analysis Data Warehouse there are various components and various types of data fed into the Data Warehouse:

- Campaign Management data defines the business campaigns to be run.
- Distribution is the initiation of contact with the intended recipient of the campaign. This is usually an offer of some sort to the customer.
- Customer Service is where the customer might contact someone in your organisation to ask a question about the offer.
- Administration is where any action taken by the customer, such as a purchase, is recorded.
- Analysis is where the MBAs and knowledge workers analyse the campaign to determine results and lessons learned from the experience.

There is a separate Newsletter that discusses these types of Data Warehouses in detail.

9.1. Some Example Returns Using Data Warehouses

This section describes some typical benefits realised from Data Warehouse in financial services companies around the world.

- Application:** Product Rationalisation.
Situation: Half the product line found to be unprofitable due to low number of clients and low premium payments.
Solution: Launch "Product Rationalisation". Cut the number of products by half. Leads to "Business Simplification" a massive Business Re-Engineering program.
Value: Largest business project ever undertaken by 100 year old company.
- Application:** Target Marketing.
Situation: Legislation changes causes confusion for thousands over whether to retire at the end of the financial year.
Solution: Profile customer database, select all those people who would benefit from retiring before legislation change and target them for rollover products.
Value: \$A440M deposited into rollover fund. Some \$A300M up on product managers forecast. Significant funds from other companies deposited into the rollover fund.
- Application:** Cross Selling.
Situation: Customer wishes to cross-sell existing clients.
Solution: Provide analysis capability to profile existing clients to determine who owned the product. Use a decision support system to select targets who did not own the product.
Value: Response rate for new product purchase using direct mail is 18%. (As opposed to 2% for a third party mailing list).
- Application:** Up Selling.
Situation: Customer wishes to up-sell existing clients.
Solution: Provide ability to select existing customers to upgrade products.
Value: Response rate for upgrade direct mail campaign is 33%.
- Application:** Variance Analysis.
Situation: Senior management does not receive timely P&L report.
Solution: Provide easy to use tools and access to revenue/expense database. Management conducts own variance analysis by department, division and bank.
Value: \$US2M increase in net income from more timely management decisions.

Application:	Cost Management.
Situation:	Cut corporate spending by 10%. Implement program within 3 months.
Solution:	Use relational databases. Create flexible applications for 285 departments to analyse expense data. Support senior management summary reports, consistent with department details.
Value:	Cut expenses by 10% - or \$US100M - from prior year.
Application:	Resource Allocation.
Situation:	Misallocation of departmental expenses increases costs.
Solution:	Combine revenue, expense, headcount and asset/liability information into one database. Provide easy to use tools for access by all levels of management.
Value:	\$US7M increase in net income through better resource allocation.
Application:	Profitability.
Situation:	Unprofitable bank retail customers are causing a drain on resources.
Solution:	Use Customer Information System and product profitability to build customer profitability model. Use model to reprice products and create household pricing. Increase net income by \$US20M.
Application:	Segmentation.
Situation:	Marketing did not know what kind of customers were using services.
Solution:	Combine Customer Information System with cluster-demographics to build customer profiles by product and market area.
Value:	Develop products to meet the needs of customers. Increase net income by \$US3M.

Business Benefits

The business benefits as stated by Aaron Zornes - VP of Meta Group, a very well respected IT consulting company are as follows:

- More cost-effective decision making
- Better business intelligence
- Enhanced customer service
- Enhanced asset/liability management
- Aligned with corporate downsizing
- Relationship to Business Process Reengineering

“Having a good decision support system is no longer a competitive advantage, it’s mission critical - you have to do it. If you don’t, you’re going to fall behind.”

Meta Group

10. ONE APPROACH

My experience has been that investments in marketing and sales campaigns are a high payback area in which to implement the initial Data Warehouse. This initial Data Warehouse allows more carefully targeted marketing campaigns and the ability to learn from the experience for future campaigns.

The approach is to run three marketing campaigns. These campaigns generally market the same product or offer to three different groups. The only difference in the groups is that they are more accurately targeted in each successive campaign. Campaigns may be cross-selling products, up-selling products or even customer retention programs. The only requirements of the campaigns are that they are recognised as important to the business and affect profit.

Campaign 1

The initial campaign may have already been run by your bank or insurance company. The idea of the first marketing campaign is to run the campaign as per normal, using whatever current technology is available. Many customers have an existing marketing system and have collected campaign responses. This existing data may/may not be useful as a base from which to measure.

Campaign 2

Learning from the actual solicitations and responses gathered from the first campaign, select campaign targets for the second campaign. This targeting will be based on all available information within the developing Data Warehouse. All responses from the second campaign are captured in the Data Warehouse. There will almost certainly be an improvement in Campaign 2 over Campaign 1.

Campaign 3

Learning from the actual solicitations and responses gathered from the first and second campaigns, select campaign targets for the third campaign. This targeting will be based on all available information within the developing Data Warehouse. All responses from the third campaign are captured in the Data Warehouse. There will almost certainly be an improvement in Campaign 3 over Campaigns 1 and 2.

The final cost benefit of the developing Data Warehouse will be the difference from the first campaign and the third campaign. In most cases the response rates from the first campaign to the third campaign double. Thus marketing effectiveness doubles. Some clients experience a four-fold improvement in response rates. It is this sort of improvement that will cost justify the use of Data Warehouse technology within any bank or insurance company.