Management Analytics and Software Engineering

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Dedicated
To
All Management Analyst and Software Engineers

EDITORS

PREFACE

The Book on Management Analytics and Software Engineering consists of various articles and research papers related to Management, Analytics, Software Engineering and Psychology. The main Objective of this book is to make people aware of following topics:

- Management,
- Analytics,
- Software Engineering,
- Customer Perception/Behaviour,
- Psychology.

The book deals with the importance of technology which helps Analysts in performing their tasks in Corporate and Academic fields. The book explains Management Concepts like ABC, Dividends and Consists of topics related to Gandingan Economics.

This chapter of the book comprises of authors belonging to various fields:

- Multinational Companies Like Amazon.com, MEIL Hyderabad.
- Educational Institutes Like Jabalpur University, Engineering Staff College of India, VIPSAR, LNCT Aurora Business School of Management, Sri Sairam Institutions, SRM group of Institutions and NPCL.
- Schools: Aga Khan Academy and Global Indian International school.

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BUSINESS ANALYTICS AT THE STRATEGIC LEVEL

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Abstract

This chapter presents a number of scenarios which organise the creation of strategies in a corporation with Business Analytics (BA)'s position in different ways. You will focus on the status of your company on the basis of these viewpoints when reading these scenarios. Similarly, think where the approach falls into this context. It is therefore logical to determine whether the company has grasped and recognised the full value of BA and whether more attempts can be made to drive the implementation of BA Therefore the focus of this chapter is not about how to build an activity plan, as many other books explain so well. Instead, our goal is to illustrate essential connections between overall policies for workplace safety and the knowledge that the BA role may offer in this context. The "Internet of Things" (IoT) enables remote control over devices and vehicles via electronic sensors over the Internet. IoT allows tangible entities to communicate directly without any human involvement, and analytics are becoming increasingly necessary in combination with increased process digitalisation. Digitalisation ensures first and foremost that human costs will be eliminated from operations. Secondly, it means that analytics will be used to make these choices while successful human decision-making takes place—and the accuracy of those decisions is essential to optimization. Analytics

not only means automating cost-reduction procedures, but also automatic judgement processes that provide higher income when it comes to which consumers are approached, how pricing can be carried out how to schedule trucks, when stocks and the like should be replenished. This has meant a significant shift in how companies today interpret analytics. Ten years ago, analytics sponsored an exotic judgement that some companies thought to be healthy. Today, the digitalization agenda is a well-understood imperative.

Strategy and Business Analytics Implementation

In order to encourage our discussion of different alignment levels between the strategy and the BA roles, we give an overview of the strategy framework and how it is developed. A policy is a summary of the way an organisation actually works and is to operate. It normally occurs one year at a time. It seeks to adapt the sector, services and activities of the company to the market in which the organisation works. As a general, a plan aims to contend with business challenges shortly while also attempting to create strategic benefits in the long term. Specifically, the approach is formed by identifying a set of specific and achievable objectives to be accomplished by particular organisational parties. The priorities mentioned are also based on assumptions which could be more or less accurate of how the different divisions can meet these objectives. There is also a list of initiatives that identify a plan that wants to bring all company operations to the next level. The strategic method typically takes place once a year and also involves a significant factor of adjusting the plan of last year to the current situations and goals of next year. A company will implement a plan from scratch, but it typically only occurs as part of a full leadership transition, or when the organisation determines that the old strategy has not been successful or is not sustainable. A policy planning phase is a combination of analyses based on multiple data sources or approaches or both. Our priority is BA; hence, we focus on the distribution of electronic data, usually from data stores.

The knowledge is used for modifying and organising business practices in the operating areas of the group in a technical or overall management context. Our use of the term synchronisation is that strategic management cannot be treated as a set of serial steps, but rather as a certain number of simultaneous activities to be organised across a number of divisions. The technique is often said to be like teaching children — it's not important for us to do the right thing, but it's essential for us to be consistent. This ensures that organising events in the company is necessary, so that they all go in the same direction. The purpose of a strategy planning project is to update a range of items, such as the vision of the organisation, around long-term objectives, and to update its mission, which is a brief overview of how people strive to meet these aims. A strategy should not only reflect the general plans on how to take action in the next few years, but also certain goals which in particular and in numbers, define the expected outcomes of the strategy in the following year.

Strategy and Analytic Business Scenarios

In the following pages, we present four examples demonstrating various convergence degrees between the BA role and the plan of the organisation. The purpose of these scenarios is to allow readers to examine where their company has to do with these scenarios. The scenarios will offer feedback into if the organisation's maximum potential in BA is recognised and realised and whether further effort can be made to maximise and develop BA's implementation.

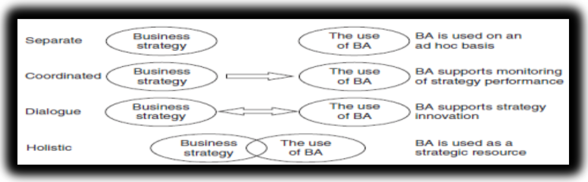

Figure 1: Relation of Strategy to BA

The four scenarios are illustrated in Fig1. The manner in which we explain the relationship between strategy and BA will also form the basis of the remaining chapter.

Scenario 1 is that the approach is not formally related to BA. Companies with no data or minimal data spread through a wide range of source systems that are separated in their strategies are usually not able to relate business strategy to BA. Data are not used

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for decision-making at strategic level in these organisations. Data was instead used to address specific questions and to simplify processes without any relation to business strategy in connection with ad hoc recovery. Many organisations have recognised that the mission is not accomplished by records, manpower or technology. From a political point of view, a maturing pro-cess may be launched. Alternatively, the organisation just proceeds with an information-driven corporate plan.

Scenario 2 is that BA supports a practical approach. If company orders, in connection with the execution of the strategy, that the BA function track the achievement of goals of the individual functions, we provide cooperation between the strategy and BA. How if BA does not flow back to the strategic stage, then the BA role is reactive to the strategy functionality. In this case, the task of BA is simply to generate reports to support each department's results.

Scenario 3 is the strategy-BA conversation with the functions of the BA. If the company makes sure that each of its functions optimises its working method based on BA knowledge but also that the strategic function participates in the learning loop, we have a BA function which supports the strategic function proactively. A learning process is enabled as the BA feature advises on company goals and analyses and recognises gaps in expectations and actuals to enhance both future plans and the efficiency of particular departments.

Scenario 4 is strategic resource details. The fourth scenario is defined by the fact that intelligence is treated as a critical weapon for strategic determination. In assessing the business opportunities and risks, businesses that fit into this scenario can understand how the details, along with its tactics, will provide them a competitive advantage.

Perspective on consumer relations

This strategy is usually important for businesses that rely on establishing positive relationships with consumers. Banks, insurance firms, and utilities, for instance, in highly penetrating countries, are all good examples. High penetration businesses must maintain current clients and simultaneously draw customers from the market.

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Other forms of businesses, such as Apple, Nokia, Nike and Coca-Cola, also regularly use customer knowledge. In addition, they have less transactional details about their clients than, say, their banks and the arrangement is less formal than a subscription. It is more a psychological association or a brand. A brand is used with optimistic feelings to wrap tangible goods to improve consumer satisfaction. These businesses conduct usually for "market intelligence" derived market information. Information is generally gathered for this case, often by external collaborators, contestant tracking and questionnaires. So information is not typically processed in a data centre. The main distinction between the viewpoint of a product and the perspective of the custodian is whether analyses are based on goods or consumers. The empirical base table, which for product viewing is the index underlying the analysis in its less aggregated form, has as many rows as the firm has current and historical subscriptions. Furthermore, their distinctive attribute, for example, is their telephone number. If the study is based on the consumers' viewpoint, it would include as many rows with the same telecom sector as the company has current and historical customers. The distinction here is that one customer will have several telephone numbers. Like us grouping subscribers on the basis of which product they ordered from a product viewpoint, we will divide customers into segments if our base table supports a consumer perspective. In other words, the business wants to know which consumers purchase which goods to plan its research from a customer's point of view. If we assume that we are a supermarket and that the only electronic information we have is whatever goods are sold together, we should plan analyses from a commodity viewpoint only, provided that we only deal with the information in the data warehouse. This is why so many discount retailers offer consumer loyalty cards, enabling the retailer to monitor several transactions in many stores connected by means of a customer code that efficiently customer-oriented research. A first obvious exercise for an objective base table is to execute a value-based segmentation. The consequence of this study is a consumer breakdown of gold, silver and bronze segments (or high, medium, and low). The breakdown is critical as it provides the basis for consumer service. The most important customers must be kept, the middle ones must be cultivated by means of extra promotional

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CUSTOMER AND PRODUCT PROFITABILITY ANALYTICS

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Customer Profitability Analytics

Customer profitability analytics is the process by which you identify which consumers really make profits for you. In certain companies, there is an expectation that any consumer is a good customer, but that is not always the case. Profitability for the consumer typically comes under the Pareto or 80/20 rule. In other words, 20% of your consumers are expected to make up 80% of your earnings. Conversely, another 20 per cent of your clients are expected to pay 80 per cent of your customer expenses. Knowing what is relevant. Customer profitability is crucial because if you cannot discriminate between the customers who make money and the clients who lose money, then all of the customers will be handled the same and your profitability will decline. If you can segment your clients into categories, your marketing message and service quality can be customised for each category. Profitability research provides you with a deep knowledge of the shopping patterns of your consumers and the costs associated in delivering the goods they order from you. This information will help you concentrate on the highest profits by genuinely helping successful clients and motivating others that pay you money to compete. This calculation is a valuable instrument to be used constantly, but it is extremely important in a challenging economic setting. Obviously this analytic method will be used if profits drop or costs rise and the company is not as profitable as it used to know why and take the action to get the enterprise back on track. You will have the potential to examine and group deeper, by knowing the profitability of such client segments, so that you can recognise any patterns among each group as where they work, when they first bought or from. For example, your best consumers made their first buy from those ads in a single publication, and your least successful customers come from a list of direct mail campaigns. This information will help to inform your future campaign strategies, so that you do not use the list again and consider the particular magazine for more ads.

Customer profitability analysis offers a rich analytical tool, allowing a thorough evaluation of individual products or transactions and providing a degree of openness that can offer really useful insights. Customer profitability analytics should be used by any company. And non-profit-making organizations like the NHS. While such companies do not have clients as such, they have 'payers' who are certainly interested in expanding their budgets as far as possible so they can support as many individuals as possible because they do not attempt to make a profit. For example, I collaborated with the NHS using this form of research and found that only 5% of their patients were eligible for over 200 accident and emergency visits. They were 'super consumers' who obviously had various challenges beyond their 'day in A&E.' By emphasizing these super-users, they have been able to pursue new support to free up money for others. Customer viability will also help you determine who is using your goods and services regardless of your concept of 'customer.' It not only makes you focus on renting clients but also finds opportunities to save expenses. This kind of analytics is also of great value to broadband companies. Any customers – the super-users – can end up using their unrestricted company so frequently that they are unprofitable. The study of regression, correlation or data mining was also used to distinguish various user/customer classes.

Customer profitability research has been possible since at least the beginning of the 1980s, but it is still not used because of the gold mine of knowledge they are willing to give. This method of research is originally used in banking and helps you to calculate the contribution each customer makes to the total benefit and the main drivers of this profit. It is also known as a consumer version of the P&L comment. If you mention that you supply big corporations with electrical components, you will have 10,000 clients in your database for several years. Via consumer profitability research, you can break those 10,000 consumers into percentage categories from top 10% to low 10% based on a number of flags, such as product, country, market volumes, sales frequency and customer support. You may find that a certain consumer likes your sales staff that it spends too much is a loss-making customer because of the problems they always pose during sales. Although this customer can look nice on paper, more thorough customer profitability analyses reveal that the same customer often spends a great deal of time asking questions and whining about facets of the product or product that make it unprofitable. The main challenge of consumer profitability research comes that you don't take the maximum benefit of a customer for life. If you measure each customer's profitability across the product or service spectrum, the total benefit can be overlooked. In certain businesses, a buyer who purchases five different goods is viewed as five different clients rather than one customer who buys five products, which may lead to unprofitable consumers becoming very lucrative in complete sense. This analytical technique can often easily be overlooked or skipped, because profitability is the area of the financial department, thereby missing the pictures and information of actual consumer profitability. It is critical that the divisions of finance and customer service work together in this manner to obtain useful additional knowledge that can contribute to marketing campaigns and decisions.

Product Profitability Analytics

Many companies realize how lucrative the market is, but very little takes the effort to get into each product or service's individual profitability. As a result, few companies know who is making money from their goods and who is losing money from their products. In addition to genuinely practical and strategically beneficial market analytics beyond profits and gross margins, secret or unique benefit and losses that are important to the product portfolio must be revealed. But that's far better said than done. Many organizations have broad, diverse product lines, and it is also very difficult to distinguish the costs effectively in operating terms across these product lines. For example, approaches for assigning sales, promotion, advertisement or customer care costs to each commodity may be way too random to provide any real meaning. Moreover, many vendors and changing price prices will add to the uncertainty. However, without knowing which goods are profitable and which products are profitable, bad business choices would certainly be worth the effort. Consumer profitability analytics allow organizations to find profitability insights through the product portfolio so that more choices are taken and profit is protected and improved over time. This is critical because corporations need to be competitive and know where money is made and lost. Product profitability research helps you to affect the actual costs of each product so that changes can be made that have a positive effect on earnings. You might want to support one product more aggressively and to invest in research and development in order to discover fresh, more lucrative products if you find that one product is more profitable than the others. Alternatively, you will either make organizational and production adjustments in order to benefit or withdraw the product from the line if you detect a product failure. Of course, before you make any critical decisions, you can carry out further analyses so that you do not unintentionally damage earnings. For example, there is a supermarket which leased its product portfolio and noticed one of the washing liquids they stocked lost money. It really cost the supermarket money to store the items. Looking at the results in isolation, the store should avoid storing the items. Fortunately, they did a lot of analytics and even found that the individuals who bought this liquid were their top spenders. If they pulled this product from their shelf, it would most certainly have annoyed their most valuable clients who would have wanted to go to another store to buy the particular liquid washing.

When you launch your company or change your product and service offering, you should be using Product Profitability Analytics. You should know what goods your champions, your loss leaders and your pets are at any moment. And you should consider strategically updating this material at least once a year. In addition to your

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product or service spectrum there are typically substantial expenses, but you want to be completely aware of those you add and continue to pay. Profitability analytics give answers as to which goods or services that you sell make money from you and which lose money. To measure the product profitability, each product must be assessed separately. While the previous approach allowed you to look at each customer separately, the substance needs to be analyzed this time. This includes a detailed cost assessment. This can be very difficult since similar goods or services would be available in each organization and share manufacturing processes or cost bases. It can also be very difficult to divide and assign costs where economies of scale have affected costs. However, this method can only be helpful if you find a consistent and reasonable way to apportion costs for the different goods. For example, take a cell phone provider. The company is able to develop and market 20 different phone types, ranging from a basic smartphone to state-of-the-art smartphones which can do little but make tea. You will find that the company is doing better if you looked at the sales and the profit and loss statement. Smartphones are popular and the demand is booming. Most people also want to update their new phone, so it's a big continuous market. But the organization does not know which of its phones make the most revenue. You know which versions sold well in volume but never measured the feasibility of the design. The sales manager will define one type of product that outperforms the others by applying product profitability analytics. Furthermore, he describes a group that losses revenue. Although one model sells well, it is high and there is a busy end of the market. Competition with major, well-established brands like Apple is challenging. Moreover, the technology is quickly evolving, meaning high R&D costs.

In the other hand, the easier mobile sells just as well, but has a much better margin and less competition. This product is aimed at older consumers or mobile phones and has found a market and takes advantage of the niche. Additionally, the product managers can see where the costs occur on any product marketed by the company and use this knowledge to change the manufacturing process or processes, so that costs are minimized or the product dropped off the range. These insights have also had an influence on marketing and advertisement, as it helped to develop this model as a cash cow to the older consumer. More detail on the activities of each product helps the sales department to market or sell alternative items, complementary to the cash cow product, in a satisfactory way, after the initial sales. For example, they built a simple, user-friendly tablet to accompany the phone and quickly distribute to pleased current customers.

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Amit Phillora has 12.5 years of corporate and academic experience. He has authored 11 books and published more than 20 national and international research papers and articles on diverse subjects including Psychology. He is recipient of several prestigious academics awards, including, Global Educational "APJ Abdul Kalam Award" by ESN Publications, Distinguished Academician Award 2020 in Management Sciences, Research Excellence by IMRF, and Young Achievers Award by Institute of Scholars (InSc) Bangalore. On the Seventy Fifth Anniversary of United Nations on 15 Dec 20, he was selected to participate in the International Webinar organised by IMRF on UN Goals – Quality Education – The Future & International Academic Excellence Awards 2020. In recognition of his professional excellence he was honoured with Professional Excellence Award Certificate, Excellence Award Momentou and "A Special Offer Card" from IMRF. He is a regular visiting faculty with prestigious Educational Institutes like Aurora Business School of Management, Hyderabad and Academic Counsellor for IGNOU, Hyderabad for MBA Course. Besides he is a trained Counselling Psychologist. He has contributed in the field of academics on You Tube Channel. He has his own Author Page at Amazon.com:

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