



Techniques used by Arthur Andersen to add value to information

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1. Introduction

With the explosion of the new economy came new techniques to add value to information. This article has placed its focus on the global organization Arthur Andersen (AA). Methodologies such as their *Value Dynamics* and *RADframe* methodology to data warehousing are discussed as techniques AA use to create value for their clients.

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2. What is the new economy?

Manufacturing was the basis of the industrial economy. Production of physical goods was the way value was created. Capital, raw materials and labour were the main factors of production. Capital was the means of financing factories, machinery and the raw materials necessary for production. Raw material such as wool, cotton, coal, oil and steel formed the basis of products. A large pool of unskilled labour was necessary to produce these goods. The infrastructure supported the movement of goods. Railways and highways are the legacy of the industrial economy. Mass production of standardized commodities was the norm (Gulke, 1995).

The so-called 'new economy' or information economy is one where information-rich goods

and services make up the greatest proportion of the GDP and/or where information workers constitute the majority of the workforce. Many of the world's developed countries have now entered this stage. Traditionally, the telecommunications, broadcasting and computing sectors are considered the major industries involved in the processing and distribution of information. There is debate whether the equipment necessary for these services should also be included in the equation. Today most products and services have a high information component. Research and development costs are escalating as companies try to gain a competitive edge through innovation. Even traditional services like banking and insurance have moved beyond mere information processing in devising information-rich products. The fact is that information - and hence information workers - is central to most of the work performed in the modern economy (Information industry and the economy, 1995).

The industrial economy was based on scarcity, whereas the information economy is one of abundance. In the industrial economy capital was scarce and valuable. Labour was abundant and therefore cheap. In today's new economy capital is abundant and venture capitalists actually encounter a shortage of worthwhile projects for investment. Skilled labour with specialized skills commands a premium in the information economy. Information, too, is abundant. What is scarce is the knowledge that is the basis of innovation (Grulke, 1995).

The new economy is affected by the fast developing network technology (e.g. telecommunications, Internet and intranets). Network technology has changed the market place into a global market place where place and time is of little consequence. The development of the affordable personal computer and user-friendly software has opened up the market place for computer technology to everybody. Computer and network technology has also created the opportunity for the information society to manipulate the fast growing amounts of data to their advantage. This advantage can be the creation of new information-related organizations and career opportunities. Organizations can manipulate information to innovate, make better decisions and create competitive advantage in the global market place. Information and knowledge are considered the most important resources in the information age for establishing a competitive economy.

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3. Arthur Andersen's use and application of the new economy

When Arthur Andersen uses the phrase 'new economy,' it is referring to the new world of business that has evolved, and the new community that works in it: the people who are committed to new ways of working, competing, living and growing. They hope that they can add meaning to the term by their use and application of it.

More particularly AA believes that there are four major factors that have driven the change to the new economy. These are:

- Technology
- The war of talent
- Globalization
- Intangibles

3.1 Technology

In the last decade, communications have been revolutionized. We've seen the advent of digital technology, the rise of the cellular phone and the creation of the Internet.

The effect of all this is to make it easier for us to communicate with each other than ever

before. The most exciting new technologies are focused on connecting us to each other via our phones, computers and even our televisions.

These same technologies are also facilitating communications between businesses and between businesses and individuals. These interactions go beyond simply communicating however - they are allowing a new type of business to be carried out: e-business.

3.2. The war for talent

People, and more importantly their skills and ideas, are the prime resource of the new economy - a resource which is becoming increasingly scarce.

Companies are suffering a shortage of people. In part this is due to the strength of many of the world's economies (in other words, demand is high). However, there is also a shift in the age structure of the population.

The supply of executive talent is actually declining. In the USA, for example, the number of 35-44 year olds will decline by 15 per cent between 2000 and 2015.

Other factors exacerbate this issue:

- Women have established themselves in the workforce, they are no longer a new supply.
- Management and service industry productivity improvements have flattened.
- Immigration levels are stable.
- Executives are not prolonging their careers.

This situation is complicated further by:

- Increased demand made of people. Everyone wants people who are globally aware, technologically literate and entrepreneurial in spirit.
- More companies looking for this unique group of individuals. It used to be that only large companies offered the opportunities and the remuneration that would attract these individuals. But today, an Internet start-up can poach the managing partner of the largest consultancy firm in the world!
- People who don't take jobs for life any more. They expect to move around.

The demands of the workforce are also changing. Generations X and Y embrace change, work to live, and reject institutions.

3.3 Globalization

The world is a smaller place. Industries have been deregulated, monopolies broken and competition welcomed. Communications technologies from the telephone to the email have shrunk the world. We can now travel to more places in the world at a lower cost in more comfort than ever before.

The creation of trading agreements have brought barriers down and have led to even further economic and political integration.

The brand names of leading retail fast food outlets, electronics goods, automobiles, white goods and fast moving consumer goods are becoming increasingly familiar in a greater number of countries.

3.4 Intangibles

The rise of the intangible asset has been a key phenomenon in the growth of the new economy.

Today, market value is five times book value, with 60 per cent of value residing in non-book assets. Companies have recognized that they can create and realise value through their intangible assets too: their people, brand(s), relationships with customers and suppliers, intellectual property, etc. Some companies now focus exclusively on these assets.

King of intangible assets is Microsoft, whose market capitalization is greater than Ford, General Motors, Eastman Kodak, Kellogg Co., J.P. Morgan, Caterpillar, Sears and Boeing combined.

These changes have resulted in a reassessment of business models. New business models have emerged, new intermediaries have been created. The solutions that we provide to clients will need to change to respond to these developments; but the developments apply directly to the professional services market too (The new economy, 2000).

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4. Arthur Andersen's four rules for the new economy

Based on its new framework called *Value Dynamics*, Arthur Andersen (AA) redefines the world of assets, treating key intangible assets as sources of future value. This is how AA articulates the four rules of the New Economy:

4.1 New business models are emerging

Businesses are their assets, all of their assets – tangible and intangible, owned and un-owned. But in the new economy, intangibles, such as relationships, knowledge, people, brands and systems, are increasingly important.

Despite the growing emphasis on intangibles, successful business models will combine both old and new economy assets. In fact, it is the combination and interaction of the various assets that will determine economic outcome. Put another way, 'you are your assets, all of them'.

4.2 New business models create new risks

Companies are increasingly competing in terms of unique business models, which pushes the boundaries of traditional controls. That is, management and measurement systems are not aligned with their asset portfolios. What is more, the new economy itself is producing its own risks - from new transactions and new markets, new technologies, new competitors, and new relationships.

The news is not all bad. However, risk in the new economy encompasses upside opportunity as well as downside threat. Companies must be willing to embrace risk in order to succeed.

4.3 New processes and tools are needed to succeed

How a company builds and manages its portfolio of assets ultimately determines its success. But despite the growing importance of intangibles in the new economy, most businesses do not have formal processes and systems to manage these assets and the risks they create.

Specifically, business needs new processes for setting strategy, managing risk, and using information to measure what matters.

4.4 Transparency of information is vital to value creation

At the same time that managers are in need of better information for decision-making, new markets are creating and distributing better information about all the assets that matter.

New technologies like the Internet are making information readily available to everyone. Thus, businesses must recognize that the old 'push' model of measurement and reporting - that is, one in which companies resist disclosing more than the bare minimum required by regulation - is fast becoming obsolete. The future is a 'pull' model, one in which a transparent, user-driven system allows stakeholders to readily access what they need to know, when and where they need to know it.

With this as a backdrop, AA is about to begin a journey with a single destination: value creation (Cracking the Value Code, 2000).

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5. How can businesses begin the journey towards value creation in the new economy?

According to AA, it can simultaneously respond to the following four challenges:

- First, a business must redesign its business model for value creation, using new combinations of the assets that matter in the new economy. It must understand the external environment in which it is operating, and then take stock of its current assets to identify any gaps.
- Second, it must master risk in an uncertain environment, understanding that risk is an inseparable part of value creation.
- Third, it must manage its business as a portfolio of assets, aligning its processes and systems with their strategy. It is critical that it understands and manages the dynamic relationship between assets. This challenge speaks to the fact that, while there are established ways for managing tangible assets, few companies have adopted formal processes for managing intangibles.
- And, finally, it needs to understand how to use information to sustain relationships and create value, with the ultimate goal of dissolving the distinction between internal and external information. It must measure and report what matters, taking advantage of the technological revolution to make real-time information available to all its stakeholders (Four rules for the new economy, 2000).

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6. The Arthur Andersen framework for the management of intangibles and value dynamics

Figure 1 represents the new framework (*Value Dynamics*) that Arthur Andersen has developed.

Figure 1 Value Dynamics



The new economy is not just about e-commerce and the Internet. It is about a world in which intangibles – people, knowledge, relationships, and brand – count for as much as tangible assets like property, plant and equipment.

The left hand side of Figure 1 shows the physical and financial assets which are reflected in the balance sheet. The other three asset types are mainly intangible. They do not feature in most management and reporting systems - but up to 80 per cent of the value being created today relates to these assets. The business models of organizations such as Dell, Amazon, Disney and Coke reflect combinations of all these assets.

Arthur Andersen's view is that companies need to invest in and manage all of these assets, whichever way they are treated in the accounting systems. Investors and lenders are increasingly seeking information and assurance about these assets as the basis for their investment decisions.

Up to now, professional services firms have been focused on the left hand side of this framework. Accountants and tax advisors have focused on the financial and physical assets, consultants have worked mainly in the organizational box, advising on management and information systems. Increasingly, AA believes, professional services firms will have to help their clients to succeed in all of the areas where they are creating value (Value Dynamics, 2000).

6.1 Value Dynamics offers the road map

According to the Arthur Andersen partners, Richard Boulton, Barry Libert and Steve Samek, AA has created a new framework for creating value for clients called: Value Dynamics, as discussed above. Value Dynamics is guiding AA in the right direction for the new economy. The value creation solution suggests that all global organizations or soon-to-be global organizations, get this revolution in value creation by understanding the true sources of value for any organization and building diversified business models around them. Value Dynamics is helping AA create value for clients in the new economy in the following ways:

- Design clients businesses, based on their most important assets
- Master risk in today's increasingly volatile climate
- Create and implement systems and processes, including technology solutions, to manage the demands of the new economy
- Measure and report progress against all their key goals

6.2 Recognizing intangible assets

Successful companies in the new economy know how to make proper use of information, employees' knowledge, processes, relationships and other non-traditional assets. These intangible assets, rather than tangible assets, are now creating value for companies.

One indication of this recognition of intangibles is the growing gap between the market value and book value of many public companies. While the balance sheet accounts for physical assets and financial capital, investors often value companies at much more than what appears in financial reports.

6.3 The framework in action

Through the guidance of its new framework, Value Dynamics, AA recognizes five categories of assets: financial, physical, customers, employees/suppliers and organizational. The latter three categories contain the majority of intangible assets. Examples of intangible assets include an organization's employee and partner knowledge; customer relationships, channels and brands; and factors such as culture, leadership, systems and processes.

The Value Dynamics framework brings together in one context all the assets that drive value and wealth creation in the new economy. It enables managers to see the enterprise as a whole, to view the full range of its assets, and to gain a greater understanding of how all of these assets contribute to value creation systemically.

6.4 The framework and the future

The Value Dynamics framework supports a unique, resource-based view of strategy. That is the key to building business models that will support extraordinary value creation in the 21st century. AA helps its clients create diversified portfolios of assets that reflect the realities of competing in the new economy. Value Dynamics as a systemic view of value creation will ultimately influence all the services AA offers.

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7. Enabling information-based strategies through the use of data warehousing for management reporting

We are witnessing a real change in the role information is playing in the business context. In just a few years, information has moved from 'nice to have' to a 'mission critical' feature. Organizations are experiencing significant benefits from information efficiency.

In today's highly competitive markets, organizations have to promptly detect problems and/or opportunities and take immediate actions to resolve/exploit them.

Management reporting must be real time, feature enhanced and broadly shared across the organization. It must be selective in the relevant information contained to evaluate the situation, but deep enough to explore cause and effect relationships.

Measuring performance is not solely about analysing the history of financial figures. Financial measures are valuable in summarizing the economic consequences of actions by indicating whether the strategy is contributing to bottom-line improvement. However, they cannot prevent problems within the organization. A balanced analysis of the key performance indicators (KPIs) combines four cornerstones: financial, customer, internal processes, and learning and growth to envision an environment of success.

The results of analysing trends and patterns from historic, demographic and behavioural data are being used to solve business problems and enable competitive strategies across industries:

- Financial institutions: seek patterns in customers behaviour to bundle their products for

- specific market segments to improve cross-selling, and reduce fraud;
- retailers: analyse patterns of buying to position their products on the shelves more attractively to customers;
- telecommunication companies: constantly investigate behavioural trends to reduce fraud and bad debt; and
- cross-industry: constantly seek ways to retain valuable customers or attract new ones at lower costs.

In this highly competitive environment, where technology is enabling organizations to connect to customers, distributors or suppliers in new ways, structured and unstructured information is vital to optimise business processes, enable market strategies or integrate new business:

- Outbound call centres require timely and accurate demographic and behavioural information on their customers. In addition, understanding the customers' profile, helps to fulfil their specific needs;
- inbound call centres are delivering world class service, only possible through a profound knowledge of each customer's needs and value perception; and
- e-business is now integrating business intelligence to discover patterns of buying across the Internet, identify actions to optimise their products and processes, and maximise the value to the customer.

7.1 Enabling information-based strategies

Data warehousing is the process by which data are extracted from different source systems, cleansed to remove any errors, transformed according to business rules and loaded into a central storage area that is modelled according to the business.

The data that are integrated, subject oriented and historic can then be exploited and leveraged to provide:

- knowledge, by being accessed with a number of different powerful user access tools such as OLAP (online analytical processing), EIS (executive information system), reporting, querying, etc.;
- intelligence, by being exploited through data mining tools, able to identify patterns and trends that underlie it; and
- smart actions, by feeding back the knowledge and intelligence into the source systems such as ERPs (enterprise resources planning), e-commerce applications, marketing applications and call-centre databases.

7.2 Data warehousing implementations for clients

The overall approach to a data warehouse implementation is structured to allow incremental delivery, visioning and future benefit delivery. Each iteration is addressing a business issue that is translated into a major deliverable. In each iteration of the RADFrame methodology (the framework used by AA) there is horizontal segmentation of the process based on roles and responsibilities:

- The project management tasks are performed by the project manager to keep the project under control, ensures quality and enables change along with the implementation process.
- The infrastructure tasks are performed by the technical personnel to ensure the technical architecture is in place and consideration is given to performance optimization.

- The performance tasks are performed by the project team, from analysing the requirements to rolling out the system.

Start-up begins with the vision phase. The objectives of this phase is to provide a global picture of how the company can broadly exploit its information, understand the major feasibility issues and define the scope of the project. At the beginning of each iteration the vision should be revisited.

The objective of the analysis and design phase is to understand the business problem and articulate it in a business model that will be interpreted and refined cyclically to design a comprehensive solution.

The objective of the development phase is to construct a feature-complete version of the data warehousing application and implement the technical architecture.

The objective of the beta phase is to conduct real-world testing of the data warehousing application with live users and data.

In the roll-out phase, the final application is delivered in the production environment while the users are trained.

Concurrently, metadata is defined and designed in parallel. In the infrastructure track consultants define the project standards, technical requirements as well as the system interfaces and platform architecture and in the management track they analyse scope risks and develop a plan for the next phases.

7.3 Adding value for clients through data warehouse implementation

The breadth of AA's experience has given it a thorough understanding of the problems facing companies during the implementation of data warehouse projects. Working in partnership with clients, it can transfer its experience, bring technical and industry expertise, business solutions know how and offer practical advice.

In doing so, AA can help clients reap the benefits of focusing the client's organization on getting value out of one of their major assets - information.

To keep pace with the moving target known as customer demand, companies today need to build flexibility into their warehouse operations so that they are ready to give customers whatever they want, whenever they want it. In this new competitive environment, product customization has become the new focus - and a critical function of modern warehouses.

In fact, AA companies today view the warehousing phase as a 'last chance' to please their customers and stay ahead of the competition. As a result, they have identified a number of ways to create additional product customization opportunities in the warehouse. Prevailing strategies include incorporating value-added services such as compliance labelling or floor-ready packaging into warehouse operations, as well as postponing final assembly until the warehouse phase. At the same time, these companies also improve product delivery by practicing virtual warehousing and redefining the warehouses as knowledge centers for the entire supply chain. The increased emphasis on value-added services has also prompted many companies to redefine their warehouses as profit centres rather than cost centres. AA has identified the following benefits for companies:

- Increased ability to customize for a wider variety of finished goods;
- reduced inventory, especially safety or buffer stock, that ties up capital; and

- improved customer satisfaction (develop a customer-focused and value-centered warehousing strategy, 2000).

Although product warehousing falls outside the scope of data warehousing, the data warehouse of a company can assist the warehouse manager in providing value-added reports regarding key customer and process-related issues regarding the physical warehouse functions. The data warehouse can provide a form of virtual warehousing for the physical warehouse. This will assist in the identification of various processes and areas for improvement, but most importantly provide the manager with the information required for JIT (just-in-time) production and delivery of products. A data warehouse can also accommodate the quest for knowledge centres. A knowledge storage place within the data warehouse will provide managers with important decision-making information about stakeholders across the supply chain. This can be produced in report format, which will assist the warehouse manager in identifying areas of concern and/or opportunities.

7.4 Establishing partnerships with customers by selling added value

The term *consultative selling* has been around for more than a decade, but until recently it meant little more than asking a few questions before launching into a standard sales pitch. Today it means much more. Over the course of a single sales call, a consultative salesperson uncovers the product characteristics that a customer values and helps the customer see how the company's products and services deliver those value-adding features and benefits. Over the course of a long-cycle sale or a product life cycle, a consultative salesperson tailors the product and service offering to deliver more directly those value-adding characteristics.

Although product features are easy for most competitors to duplicate, service advantages are not. The ability to deliver value-added services depends on two resources that are difficult and time-consuming to develop: talented, committed people and efficient, effective internal processes. Responding to customer service needs cannot be done with the same ease as a price cut or a colour change. According to AA, that salesperson who always asks for special service for customers is probably doing your company a favour. Those customers asked for value-added services and the salesperson asked company staff to deliver value-added services.

AA also claims that enhancing your product and service offering incurs costs, but it also increases profits. Customers are generally willing to pay for value-added services, either directly through a service contract or indirectly through higher product prices. AA has identified the following benefits for companies:

- Diminished competitive pressures as the company begins to position its product and service offerings as unique;
- reduced customer sensitivity to price; and
- greater profit margins (Establish partnerships with customers by selling added value, 2000).

Here again the field sales force function is not directly related to the data warehousing function. However, the information which the salesperson would require in order to create value-added services would come from a data warehouse reporting tool. A data warehouse implementation would satisfy the information requirements identified above.

The quest for product characteristics, on which customers place value, could be generated from data stored in the warehouse database, relating to sales volumes, promotions and customer sales history tables. This information would then be represented in a report format that could also include graphical representations of the data, to assist the sales manager to

better understand the bulk of information.

Once value-added services and products have been identified, the sales manager may want to know how the products and services are delivering the value-added benefits. This could also be automated by a data warehouse tool whereby a report is produced on actual goals versus predicted goals, and possible problem areas. This will assist the sales manager to act in a timely manner to problem areas, thus creating better customer satisfaction and loyalty from this value-added service coming from a data warehouse.

Problem areas within a data warehouse could also identify opportunities for product or services tailoring to changing customer needs.

As identified above, one of the resources that is needed to deliver value-added services is efficient and effective internal processes. The data warehouse will provide reports related to processes within the sales area. Problem areas and areas for improvement can be identified from information coming from the data warehouse storage.

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8. Conclusion

It has become evident that, through the use of a global organization like Arthur Andersen, the new economy has indeed brought with it new techniques to adding value to information. An outstanding feature of the new techniques to adding value to information falls within the area of technology and system implementations. These range from knowledge management systems, ERP systems to data warehouse implementations. A data warehouse implementation has shown extraordinary value-added features for organizations. It has become safe to say that, as much as e-commerce/e-business has become essential for organizations in order to add-value for their stakeholders (which falls outside the scope of this article), so is a data warehouse implementation essential for providing mission-critical information to support management decision-making. To conclude, the author reiterates the absolute importance of a technology focus for businesses in the new economy and for those businesses that want to be key players in the globalization process of business.

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ISSN 1560-683X

Published by [InterWord Communications](#) for the Centre for Research in Web-based Applications,
Rand Afrikaans University