

Application of system dynamics to brand management

VANGUARD
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Management of brands is a highly complex business task. For many brand owning companies (from Coca-Cola to Amazon) brand value is the key driver for the company's overall strategy. Brand value may be considered from a number of viewpoints. One insightful starting point is to recognise that brand value is linked to preferential choice for the brand. This may be for customers ("I will chose brand X over Y, Z etc.") but can equally apply to other stakeholders (employees, partners, shareholders etc). Brand management is about competing for preferential choice among all stakeholders. Choice is affected by a host of factors both internal and external to the business. Internal factors will span the organisation and successful brand management requires a systemic perspective. Many companies now have good tools to manage and control operational processes and the cost side of brand management. Few companies have processes to manage what is classically termed intangibles and the 'intangibly-driven' consumer processes that are the fundamental components of the revenue generating part of brand management. Arguably, competitive advantages in the intangibles can create substantial value and 'hard to copy' processes for the companies that apply this successfully. In the past these processes have been hugely complex to understand, decode, and quantify. Therefore, brand management has been dealt with intuitively and with inappropriate management focus justified by poor understanding of the causality between drivers and outcome over time.

The use of the Strategy Dynamics approach, System Dynamics simulation modelling and Systems Thinking to support the development of more informed brand strategies has proved to be very effective. We have spent a number of years developing and refining systems-based approaches and methodologies that allow any brand owning company to get to grips with how to manage their brand. The companies who take early steps to become leaders in this area stand to develop lasting benefits.

DISCLAIMER: This paper includes a client case study. Throughout this paper "ethnic" is used as a simplified terminology to describe non-Canadian nationals and non-Canadian food concepts. Numbers may have been disguised.

Agenda

- **Brand management is about generating preferential choice from stakeholders**
 - By influencing the flows driving choice
- Example of applying system dynamics and systems thinking to brand management
- Implications for management and outcomes of initiatives

The aim of this presentation is to illustrate how the use of System Dynamics and Systems Thinking approaches can support the development of brand strategy delivering superior value.

The first section will provide a description of the drivers of brand performance, and emphasise the need for dynamic and systemic analysis by brand managers

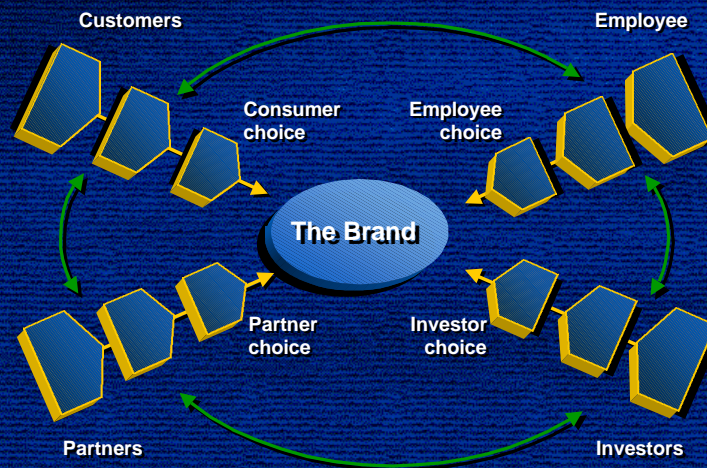
The next section will describe a case study. In this example, System Dynamics and Systems Thinking methods were applied to create insights on issues facing a Canadian restaurant chain caused by changing demographics and eating trends in one of their markets. Due to commercial confidentiality, specific details and numbers have been disguised.

Finally the implications of applying dynamic frameworks to brand management will be assessed.

Brand management is about understanding and driving the resources building choice

Simplified

In an environment increasingly driven by intangibles, optimising the choice processes of the key stakeholders is going to be crucial



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The brand may be represented as a system of resources. Indeed in this context the brand can be seen as the totality of the business. It is the management role to control these resources (customers, employees, skills, outlets etc.) to deliver maximum value. This may require policies to manage growth or decline of these strategic resources. Of course, this is a complex task where the resources are interdependent and exhibit dynamic behaviour.

As identified in the introduction, stakeholders are key resources for any business and companies must compete for preferential choice by each of them over the competition.

The dynamics of choice can be represented by a choice pipeline. In this case, the stakeholders may be identified in one of several states that comprise the pipelines. These states can be articulated and may range from being unaware of the brand leading through to those that are loyal i.e. stakeholders that will always choose the brand. The dynamic behaviour arises through the complex transition processes between each of these stages. For example, the time and nature of advertising will determine the rate at which the pipeline populations will be modified. Feedback behaviour is endemic when issues such as word of mouth must be considered.

The key objective of successful brand management is to maximise the population of loyal i.e. to secure preferential choice.

Thus brand strategy involves the identification of appropriate management actions to create loyalty amongst its stakeholders. The complexity arises due to the interdependency between the various choice pipelines e.g. shared resources, intrinsic delays etc. Vanguard Brand Management has developed sophisticated frameworks to support brand managers to understand transition drivers within these pipelines.

Dynamic issues typically not addressed

Inadequacies of classic approaches

- Intangible or implicit assumptions may be key in driving changes
- Impact of actions are not evaluated over time
- Ignorance of long causal chains and non-obvious elements of brand management
- Understanding the potency of key management levers in your system
- Levels are often monitored rather than flow rates, using lag rather than lead indicators for change
- The sequencing of actions required to take to achieve synergies and timely actions to respond to change



Examples

- Service quality influences price acceptance
- Cost cutting or promotions for short term profitability today may undermine long term performance
- Loyalty is influenced by the intensity of presence
- Improving values fit will have greater positive impact on sales than reducing price
- Sales are monitored rather than changing in loyalty of customers
- Building a quality image may be required before expanding on new concepts

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Current brand management practices based on traditional static methods of analysing and influencing brand performance are good but often inadequate in managing brands under the dynamic conditions that are increasingly the characteristics of modern market places.

For example, many of the existing approaches:

- do not integrate tangible aspects of a brand, such as technical functionality and delivery times, and ignore soft variables such as service quality and the profile of the current consumer base
- only focus on short-term actions to influence a brand, ignoring long-term effects, such as the difficulties in changing the brand attributes that previous campaigns have communicated
- ignore causal chains that influence brand performance, focusing on directly observable variables rather than what really influences brand development
- explore only a limited number of different options due to available analysis time and accepted culture the organisation
- do not articulate the appropriate sequencing of dependent actions

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The previous section has introduced the concept that successful brand management requires a dynamic perspective in order to formulate successful strategic plans. During a brand strategy review a multitude of issues and concerns must be analysed to give a clear picture of the most robust policies for building brand performance.

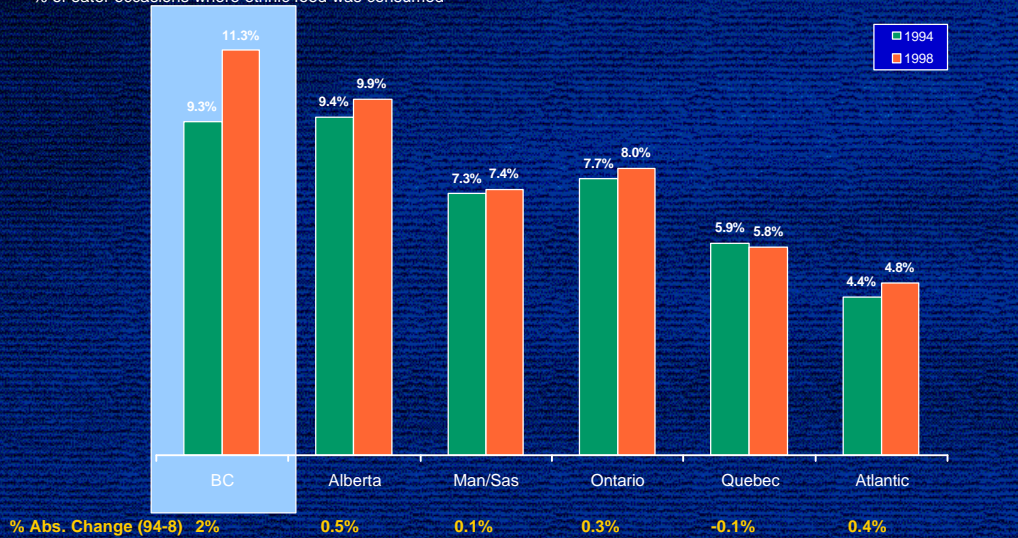
Vanguard has developed large scale System Dynamics models representing complex choice pipelines of multiple stakeholders combining these with representations of all the company resources. These models have been used to support fundamental strategy reviews leading to multimillion dollar investments.

However, Vanguard repeatedly finds that the application of simple Systems Thinking exercises and illustrative quantitative dynamic models can help address specific issues that arise during client assignments. These approaches can add value to the overall brand strategy development through the creation of shared mental models of the management team, identification of required intelligence and options for further analysis.

What follows is an example of one such application. Vanguard was undertaking a major brand strategy review for a Canadian restaurant chain. As part of the macro analysis of consumer behaviour across Canada, a change in trends for ethnic food consumption was identified. This had a potential impact on the client's future brand positioning.

BC HAS THE HIGHEST SHARE AND THE HIGHEST GROWTH IN ETHNIC EATER OCCASIONS

% of eater occasions where ethnic food was consumed



Within Provinces, ethnic share is highest in west, lowest in east and BC shows highest growth.

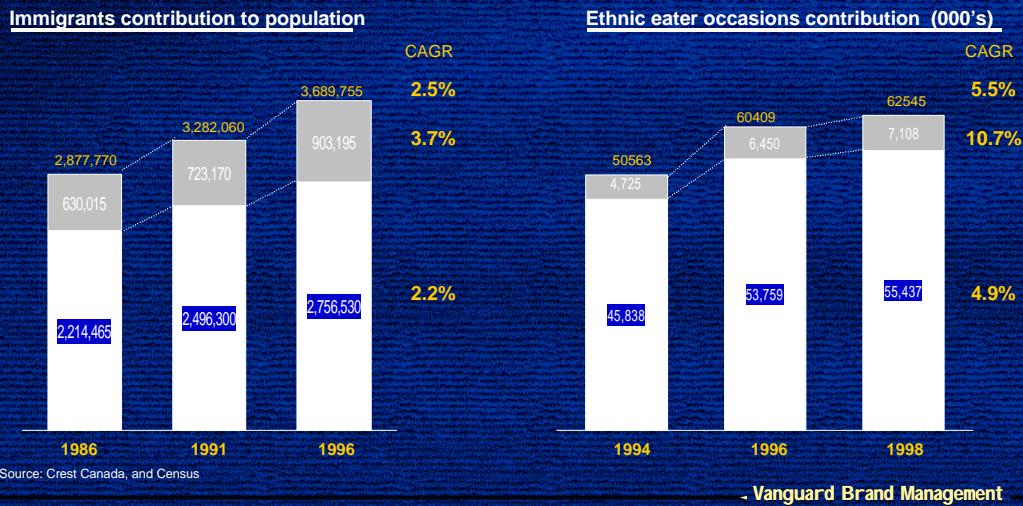
Source: Crest Canada

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Initial analysis indicated that ethnic food consumption had regional variation across Canada. Highest growth in ethnic eater occasions was in the western provinces. It was within these provinces that ethnic immigration rates are also large as revealed in the following slide.

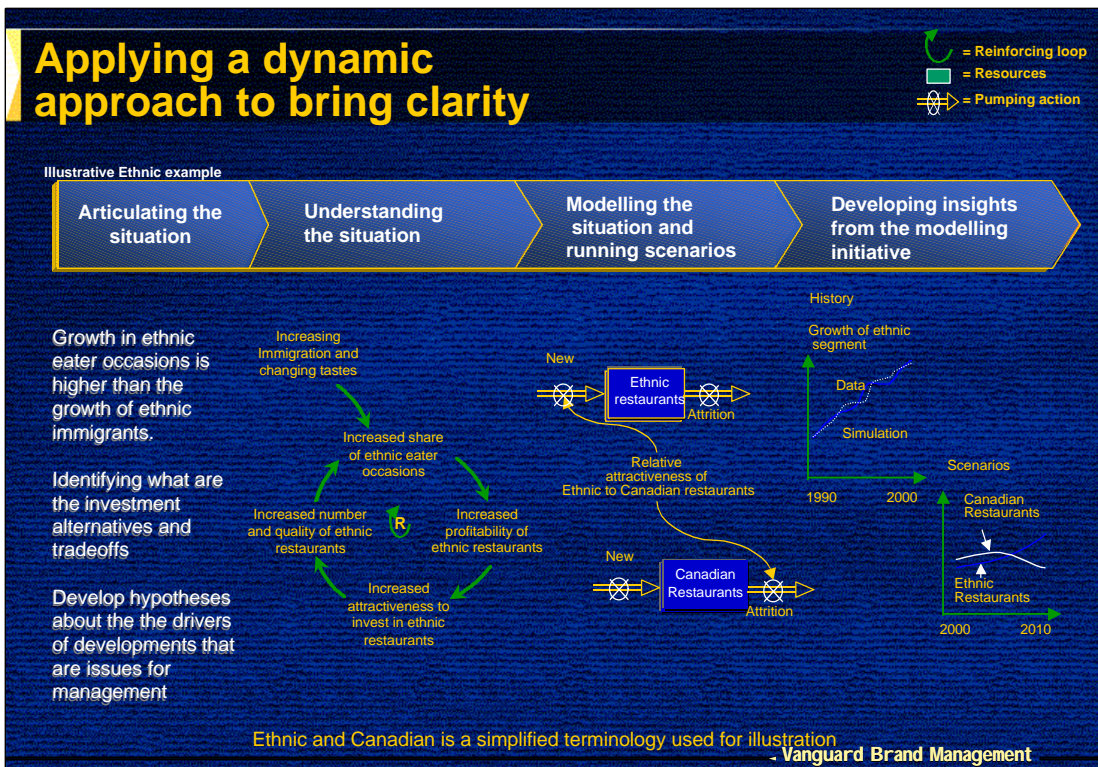
Ethnic Eating Trends In British Columbia

Comparing annual growth of ethnic immigrants to the annual growth in ethnic eater occasions reveals that growth in ethnic eater occasions is higher than the growth of ethnic immigrants.



More detailed analysis revealed growth in ethnic eater occasions within British Columbia and ethnic immigration trends. However, underlying growth in ethnic eater occasions appears to be outstripping growth in the ethnic population.

Based on this intelligence and other knowledge captured during the brand strategy study, the management team needed a structured approach to articulate plausible scenarios about ethnic restaurant development. The approach described below was used to develop several hypotheses using simple causal loop diagramming and illustrative System Dynamics models.



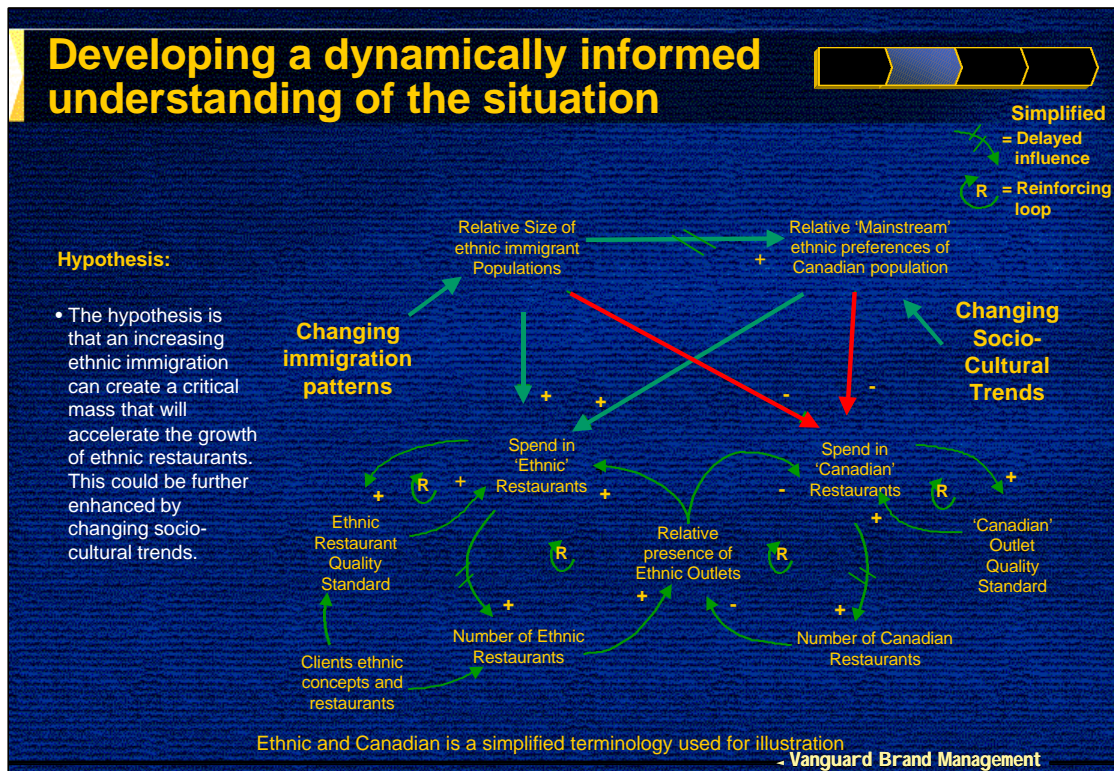
The approach illustrated above was used to explore hypotheses concerning the growth dynamics of the ethnic food trend in BC and to assess the impact of different strategy options (note that this was carried out as part of a short workshop and was intended to identify areas for more detailed study)

Step 1. Articulating the situation involved analysing available material on trends and structure of what drives consumers to different types of foods, consolidating demographic and industry information as well as developments of different food concepts.

Step 2. Dynamic hypotheses about potential interactions driving increased rates of growth in the ethnic food segment, and the corresponding profitability of investments in ethnic food concepts were developed.

Step 3. The dynamic hypotheses were then articulated in simple simulation models incorporating available intelligence

Step 4. The models were used to develop a shared understanding of the issues and to direct further research and analysis.



A simple causal loop diagram was developed with the client branding team to articulate the hypothesis that a critical mass of ethnic eater occasions would create accelerating growth in ethnic restaurant concepts. The major loops contained in this diagram are described below:

Loop 1. With increased spend in 'ethnic' restaurants, investment in ethnic restaurants will increase, increasing the number of ethnic venues, with a delay. The increase in venues offering ethnic food concepts will increase the relative presence of ethnic restaurants further stimulating growth in ethnic spending.

Loop 2. With increased spend in 'ethnic' restaurants, investment can also be made in food concepts and other aspects of the proposition.

Loop 3 and 4. Correspondingly as the relative presence of traditional Canadian foods is decreasing, the spend on traditional Canadian food concepts will decrease, lowering profitability possibly undermining the average quality of served Canadian food, decreasing the relative presence and attractiveness of Canadian food.

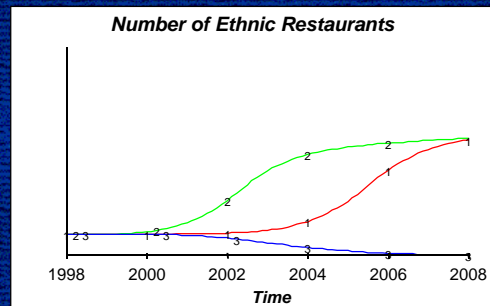
Increased immigration and a socio-cultural trends increase the receptiveness of the mainstream Canadian population to ethnic food concepts will increase the relative pace of these dynamics. In addition there will be a process of assimilation of the ethnic population into the mainstream Canadian population.

The management team found this approach illuminating and focused attention on a variety of scenarios. Scenarios included the development of their own ethnic concepts and restaurants. However, what was not clear was the timing of such development.

Identifying the archetype

Basic Archetype: Success to the successful

- A simple System Dynamics model was developed to illustrate the behaviour exhibited by the archetype
- The objective was to identify key drivers and further research to be identified
- Based on the available data it appeared that the the growth of ethnic restaurants will be rapid as expected from the positive feedback loops identified earlier
- Socio-economic trends may further drive the assimilated population towards ethnic restaurants
- Slower assimilation provides more opportunity for the growth loop to accelerate. Conversely, rapid assimilation may cause the positive loops to switch direction i.e. collapse of the ethnic restaurants



Legend

1. Base case – assimilation over avg. 6 yrs with a retained ethnic preference 3 times that of current assimilated population
2. As base case, assimilation over 6 yrs with doubling of overall assimilated population ethnic preference
3. As base case, assimilation over 3 yrs cf. 6 yrs

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Based on the causal loop diagrams that were developed, it became clear that a basic archetype was present. The behaviour of the “success to the successful” archetype has been well documented elsewhere i.e. accelerating growth/decline in each of the main reinforcing loops.

However, in order to enhance learning among the client team and to assess possible scenarios, a simple System Dynamics model was developed to represent the described system.

Several illustrative cases are shown above. It can be seen that the take off of the positive loop is dependent on the assimilation time of the population and also the choice attributes of each population.

Developing insights from the modelling



Summary of results:

- The anticipated development of the ethnic food market shows dynamics which favours the development of ethnic food concepts
- The strength of the ethnic trend is fundamentally depending on the rate of ethnic immigration into BC, and the rate at which immigrants assimilate into mainstream BC values systems with regard to food culture.
- A first mover advantage capturing a disproportionate share of growth in profitability may be achieved by early development of ethnic restaurants.

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The outcome of simulations with the simple model and debate within the client team was the following:

1. The anticipated development of the ethnic food market shows dynamics which favour the development of ethnic food concepts - leading this trend may have further advantages
2. The strength of the ethnic trend is fundamentally depending on the rate of ethnic immigration into BC, the rate at which immigrants assimilate into mainstream BC values systems with regard to food culture.
3. Small changes in preferences could affect the development of the trend and a substantial difference in the rate at which this ethnic trend takes on.
4. A critical mass is building in Canada dependent on the ethnic population and socio-economic trends. As the growth in ethnic food consumption accelerates the assimilated Canadian population food preferences will become closer to that of the unassimilated immigrant population causing an irreversible shift to ethnic food concept dominance.
5. A first mover advantage capturing a disproportionate share of growth in profitability can be achieved by early development of ethnic restaurants by the client or introduction of ethnic food concepts.

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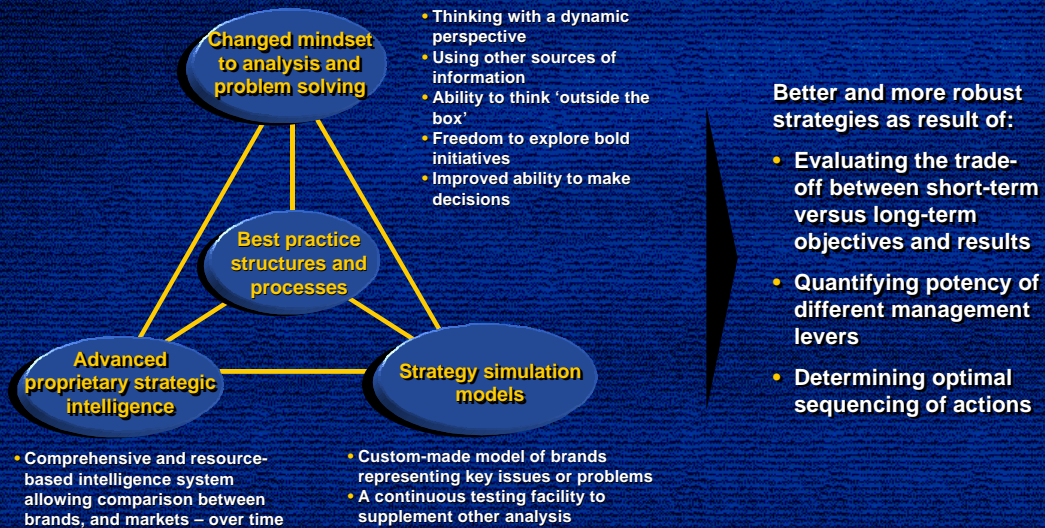
The use of Systems Thinking and System Dynamics approaches can be used to provide new perspectives and methodologies for analysing and deciding on branding policies and investments as shown earlier).

This is substantially leveraged when used in combination with appropriate brand intelligence systems. The use of strategic dynamic models makes use of brand intelligence but can also be used to direct focused intelligence initiatives. This is a key component to most client assignments.

Dynamic Brand Value Management is the term applied to this holistic approach to brand-focused strategy framework.

Implications for management and outcomes of initiatives

Core elements in the Dynamic Brand Value Management approach



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In summary, Dynamic Brand Value Management comprises four distinct components offering the following benefits:

1. Development of a new mindset among managers, taking a more holistic view, and especially concerning a new focus on driving and managing the consumer choice pipeline. Also managers shift their focus to new information – focusing on performance measures that are lead indicators rather than lag indicators. Furthermore, the dynamic approach using a resources based perspective and articulating dynamic hypotheses allowed new thinking "outside the box". Managers collectively make better and more informed decisions
2. Consolidation of intelligence according to need within an integrated database. Managers are able to identify key intelligence on the state of the consumer choice pipeline resource system. They can avoid costly un-actionable intelligence. Overall, they acquire an advanced and proprietary intelligence system
3. Dynamic simulation provides strategy models where key dynamics of core issues and trends can be tested, and a management flight simulator where the core business flows and tradeoffs can be modelled by the managers.
4. Collectively the organisation achieves brand management best practice delivering maximum brand value to the business.



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- For further reading on the on the Dynamic brand value management approach see:
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 - Warren, K. (1999). The dynamics of strategy. Business strategy review, 10, 1-16.
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