

Business Intelligence

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Abstract

Business Intelligence (BI) and Competitive Intelligence (CI) are two rarely understood methods relevant to pragmatic Strategic Foresight™. BI was methodologically influenced by the Central Intelligence Agency's (CIA) collections and analysis techniques, and ideologically shaped by the 1980s specter of Japan, Inc. BI has evolved into a collection of sophisticated techniques that merge insights from business strategy, risk analysis, cognitive psychology, organizational behavior and political science. Jan Herring's model of the CIA's intelligence cycle is outlined. The relationship of BI to Michael Porter's 5 Forces and Anticipatory Management are discussed. The requirements of an intelligence analyst, common problems and the difficulties in establishing a BI unit are explored. Finally, four key methods—Mergers & Acquisitions, Environmental Scanning, 'Shadow' Marketing and Patent Searches—are detailed with relevant case studies.

Author Biography

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Defining Business Intelligence

This essay examines the evolution of Business Intelligence and its links with Strategic Foresight and Futures Studies techniques in pragmatic applications.

Scholars distinguish between four key intelligence categories.

- Competitor Intelligence focuses on inter-firm rivalries and battles for brand and strategic positioning.
- Competitive Intelligence (CI) is defined by Ian Gordon as a method ‘to develop strategies to transfer market share profitably.’¹ John McGonagle Jr. and Carolyn Vella believe that CI orientates managers to ‘fine tuning your business planning process.’² Leonard Fuld defines CI as ‘highly specific and timely information about a corporation.’³
- Business Intelligence (BI) uses information systems and transaction databases to provide decision-making support and transform data into intelligence within a rational management framework.⁴ Herbert Mayer, vice chairman of the Central Intelligence Agency’s National Intelligence Council, defines BI as the ‘radar for business.’⁵
- Social Intelligence (SI), spearheaded by University of Lund professor Stevan Dedijer, tracks the diffusion of these capabilities into broader social contexts and across longer timeframes.

BI and CI writings dominate popular writings on business management. Companies use these techniques as a form of *market intelligence* that ‘focuses on monitoring trends in the market to identify future problems and opportunities, and provides a company with the information necessary to maneuver in advance of the change in the market.’⁶ *Defensive intelligence* targets blind-spots by ‘analyzing your own business’s activities as your competitors and others see them.’⁷ Convergent technologies including e-mail, pagers and cell phones have been used by one-to-one marketers as *proactive intelligence*.⁸ Company executives also have growing awareness of the need for *counterintelligence* against competitors and industrial espionage.⁹ Global companies use *risk analysis* to assess the ‘general background that a company needs to know to operate securely in an unfamiliar environment.’¹⁰

McGonagle Jr. and Vella link CI to parallel business processes including strategic intelligence (STEEP factors and trends), crisis management, competitive benchmarking and reverse engineering.¹¹ Companies now merge BI into inter-departmental synergies and cross-functional roles. The knowledge management company Lexis Nexis, for example, integrates BI metrics, CI analysis, market research, benchmarking and strategy into its research cycle.¹² This integration suggests that BI will cross-bond with related frameworks and tools over the next decade.

History

Many analysts trace BI's development to writings on military strategy by Sun Tzu,¹³ Miyamoto Musashi,¹⁴ Niccolo Machiavelli¹⁵ and Karl von Clausewitz.¹⁶ However this emphasis predated the 1980s fascination with Oriental exemplars. Gordon notes that during World War II both Allied and Axis strategists 'monitored the enemy and tracked the history of the battles fought by key commanders'. The intelligence gained from this leadership profiling was then used 'to determine the likely outcome of various moves'¹⁷ (notably during the D-Day landings and the Manhattan Project).

Forecasting underpinned North America's economic growth throughout the 1950s and 1960s as strategists focused on new markets and portfolio management. However this 'economic miracle' was shattered by the OPEC oil crisis in 1973, soaring energy prices, and stagflation. By the early 1980s North America's competitive advantage was being challenged by trade liberalization, globalization, and technological change.¹⁸ This perceived threat provided the stimulus for exemplars and gurus to popularize business management theories. However its dark undercurrent was an integration propaganda¹⁹ that fed on resurgent nationalism and xenophobic fears of geo-economic domination by foreign nations.

This integration propaganda was explicit in the United States' response to 'Japan Inc'. In 1986 Japan became 'the world's leading creditor nation' whilst 'the United States became a debtor nation.'²⁰ Two geo-economic debates concerned the declining market share of Detroit's Big Three car manufacturers and the commercialization of artificial intelligence technologies. Japan's trading companies (*sogo shosha*) viewed 'intelligence as organized information' and focused on prices, competitors and political developments.²¹

Japan's most famous CI organization during this period was the Ministry of International Trade and Industry that 'tracks the international marketplace and acts as an information provider.'²² US analysts claimed that MITI spearheaded industrial espionage operations and had 'negative attitudes toward free trade and capital liberalization.'²³ United States analysts also became concerned about patent filings, plant tours and trade shows.²⁴ Antitrust laws prevented competitors from exchanging information that would create price-fixing or oligopolies.²⁵ For Japan these tactics were natural because America was their 'biggest market and chief manufacturing competitor.'²⁶

Chun Wei Choo notes that this response to Japan 'focused on the alleged superiority of their social intelligence skills' and that the companies targeted included 'Mitsubishi, the Mitsui Knowledge Industry Corporation and Nichimen Corporation.'²⁷ 'The Mitsubishi intelligence staff in New York,' Meyer reveals, 'takes up two entire floors of a Manhattan skyscraper.'²⁸

This economic warfare became global in the early 1990s as the nation-state morphed into the network society.²⁹ The 'internationalization of capital', the reunification of Germany and the creation of the European Union refocused analysts on geo-economic imperatives.³⁰ In this climate American companies shifted their focus outwards and interest in CI grew and its techniques were adopted by investment banks, law and

medical firms, and in the pharmaceutical industry.³¹ The American engagement with Japan Inc, ironically, also fueled the managerial interest in Knowledge Management (KM),³² which eclipsed CI in the late 1990s.

Exemplars

The exemplars of early corporate BI had close links with the intelligence community. Jan Herring, the founder of the Motorola Business Intelligence unit, was an ex-Central Intelligence Agency analyst.³³ Herring worked closely with Robert Galvin, Motorola's ex-CEO, who was inspired to found the unit after serving on the Presidential Foreign Intelligence Advisory Board.³⁴ The Motorola unit's human resources structure mirrored the collections and analysis branches of Western intelligence agencies.³⁵ Meyer states that the unit had half a dozen staff track geo-economic areas and conduct staff debriefings after overseas trips.³⁶ These connections led credence to the critics' mistaken belief that BI practitioners regularly engaged in acts of spying and industrial espionage.³⁷

However, the Society of Intelligence Professionals refuted this position. Unlike the major Futures Studies organizations SCIP has been relatively successful in implementing ethics guidelines. A major reason for this success was that BI had to contend with the U.S. Economic Espionage Act (1996), which 'was passed to protect U.S. companies from efforts by foreign governments or companies to steal U.S. technology and proprietary information.'³⁸

BI practitioners contend that 90 percent of their raw information can be found in the public domain. In a variant on shadow networks, Faye Brill, CI chief of Ryder Systems, Inc., 'believes that 80% of what you need to know about your competitors is right inside your company.'³⁹ Intelligence analysts define public as 'all information you can legally and ethically identify, locate, and then access.'⁴⁰ Leonard Fuld advises BI practitioners to study business decisions to grasp data and 'locate the intelligence source.'⁴¹ They need to define in advance what they are looking for, set limits on answers, and 'remain loose and open to all possible sources.'⁴² F.W. Rustman Jr. describes effective analysis as 'more a process of synthesizing and putting together all of the existing information that has been obtained on a particular topic and then examining it to try and make sense out of it.'⁴³

Galvin also counter-argued that the Motorola unit was an ethical team of intelligence analysts 'who link together with internal experts largely for specific projects directed by top management.'⁴⁴ His description reveals a conceptual continuity with the Delphi technique and think tanks. Herring's subsequent clients included Merck and NutraSweet⁴⁵ and he quickly gained stature as the field's modern founder.

The Intelligence Cycle

Herring's most important contribution was his summary of the intelligence cycle which divided the BI process into five stages.⁴⁶ The BI practitioner conducts a *needs assessment* that establishes the business and market context. Herring used the term Key Intelligence Topics⁴⁷ (other writers have used the term Critical Intelligence Needs instead if KIT). Some companies use a Likert scale to rank their KITs.⁴⁸ Kirk

Tyson prefers a ‘reliability index’ that distinguishes between rumor, confirmed rumor, fact and hard fact.⁴⁹ Brett Breeding sorts information according to its attributes (shallowness, credibility, timeliness and focus) and whom to send the resulting intelligence to.⁵⁰

This scope enables the practitioner to *plan* the research tools and diagnostic scorecards, and to identify ‘data requirements and sources.’⁵¹ F.W. Rustman Jr. contends that ‘Evaluating the sources of information is one of the most important tasks of the analyst.’⁵² The practitioner then *collects* the data from published and non-published sources. The data is *evaluated* for sufficiency, ‘chunked’ into ‘information building blocks’ and categorized.⁵³ The crucial ability at this point is ‘to recognize what factors will influence the specific subject or issue.’⁵⁴ Then the data is *analyzed* to create ‘timely, accurate, and reliable’ information.⁵⁵ Business Objects founder Bernard Liautaud distinguishes here that ‘*data* is raw and unadorned’ whilst ‘*information* is data endowed with some degree of business context and meaning.’⁵⁶ Analysts must also ‘never be afraid to include dissenting judgments along with their own.’⁵⁷

Finally this information is *presented* to decision-makers and strategists to produce actionable *intelligence*. Information transforms into intelligence when it meets ‘one consumer’s unique needs.’⁵⁸ Here the analyst may use Neuro-Linguistic Programming and other techniques to present the material since policymakers absorb information through different sensory modalities.⁵⁹ Liautaud emphasizes that ‘intelligence elevates information to a higher level within an organization’, that it is ‘organic’ and that ‘it contributes to an organizational state that may be characterized as collective intelligence.’⁶⁰ This definition hints at how the study of emergence and ‘swarm intelligence’ may transform BI in the near future.⁶¹

Meyer sums up the intelligence cycle used by government security agencies and subsequently adopted by first generation CI units. Companies:

1. ‘study raw material’
2. ‘argue and debate what it means’
3. ‘check and recheck facts’
4. ‘resolve the inevitable inconsistencies in data’
5. ‘question original assumptions’
6. ‘interview experts’
7. ‘develop theses’
8. ‘test and retest’.⁶²

Other practitioners have amended this generic process with insights from operations research and the scientific method. Ben Gilad’s criterion for data evaluation considers its relevance, truth-value, understandability, sufficiency, significance and timeliness.⁶³ Chun Wei Choo divides the process into collection, evaluation/filtering, storage, analysis and dissemination phases.⁶⁴ Michael O’Guin and Timothy Ogilvie’s process involves forming hypotheses, looking for signals and sources, and then using data collection to hunt for confirming evidence.⁶⁵ Adrian Slywotzky perceives BI-oriented strategy as a form of pattern recognition, which uses ‘a different lens through which to see a complex reality’, and enables the analyst to ‘understand more of the picture,

more of what's going on.'⁶⁶

Intelligence analysis is firmly rooted in epistemological and ontological concerns; a viewpoint frequently obscured by business strategists.

BI and Business Strategy

David Hussey and Per Jenster note that BI practitioners in business circles have embraced different strategic perspectives, from Michael Porter's 'positional view' and the 'resource-based view' popularized by Gary Hamel and C.K. Prahalad to developments in 'behavioral theory', 'public policy' assessments and the cooperative stance of 'game theory'.⁶⁷

Porter's 'Five Forces' model remains the most influential paradigm 'of the relationship between the firm and its environment'⁶⁸ for BI practitioners with an MBA background. Drawing upon industrial economics Porter's model integrates the buyer/supplier web, potential entrants, new products, and inter-firm competition.⁶⁹ This contribution 'broadened thinking, both about the number of forces that should be considered and the factors within each.'⁷⁰ Its scope was crucial for subsequent analysis as the model 'provides the boundaries within which the inquiry takes place.'⁷¹ Regrettably, analysts overlooked Porter's contention that 'the removal of blind-spots is an important precursor to successfully negotiating potential competitive reaction to the firm's planned strategies within an industry analysis scenario.'⁷² However the model was limited because its 'implicit assumption' was that 'monopoly power maximizes firm . . . profitability.'⁷³ Brand, company and product positioning were not static: competitors could also be allies, customers and suppliers in different strategic contexts.⁷⁴ Porter's seminal influence linked BI with the rise-and-fall of strategic planning: BI only emerged as a field in its own right in the late-1980s.⁷⁵

The subsequent evolution of BI echoes the shift in Futures Studies from forecasting to scenarios to post-positivist theories of critical realism and social construction. However this shift has also mirrored geo-economic and sociopolitical upheavals. Throughout the 1980s the BI function was equated with military strategy and war-gaming analysis.⁷⁶ This line of development matured into sub-fields concerned with pre-emptive threat analyses⁷⁷ and wild cards.⁷⁸ A second line used Myers-Briggs and pop psychology versions of the Enneagram as tools for competitor profiling.⁷⁹ A third line integrated Management Information Systems, BI and market research into an Executive Information System.⁸⁰

A fourth line of development acknowledged the dangers of blind-spots, cognitive biases and organizational groupthink.⁸¹ This school highlighted the innate capacity of the human mind to organize data through imagination, pattern recognition, data sufficiency testing and critiquing assumptions.⁸² Its main contribution was to challenge organizational beliefs 'through detailed analysis of data, as they can sometimes be proven wrong.'⁸³ However unlike post-positivist Futures Studies this school looked to analytical psychology and empirical skepticism as models.

The emphasis on core competencies in the early 1990s redefined BI as a technique to help the Strategic Business Unit 'achieve its ultimate objectives of profitability,

competitiveness and independence.⁸⁴ BI practitioners surfed trends from outsourcing to network structures.⁸⁵ The shift from EIS to Enterprise Resource Planning systems was perhaps the decade's major trend; one that paralleled the emphasis on signals and technological surveillance by the United States intelligence community. ERP seemed perfect for flattened organizational structures despite the difficulties of 'managing the distributed data *silos* that emerged.'⁸⁶ It spawned the resurgence of 'artificial intelligence technologies to conduct knowledge discovery'⁸⁷ and a fascination with neural networks.⁸⁸

By the late 1990s the sub-field of Data Mining techniques included 'chi-squared automatic interaction detection, case-based reasoning, and genetic algorithms.'⁸⁹ Its counterpoint was, in many ways, the human intelligence emphasis on KM and learning organizations: techniques that reminded analysts that their 'own experience acts as a screen on the data as well as an aid in analyzing that data.'⁹⁰ BI's pragmatic use will be enhanced when these lines of development are recombined in an integral and holistic framework. One indication of these possibilities is Baumard's 'development matrix of nations' that examines BI capabilities in a cross-impact matrix of biological and artificial interfaces with individual and governmental dimensions.⁹¹ The future of BI may lie in this shift from artificial intelligence to intelligence augmentation.⁹²

Strategic Foresight and Anticipatory Management

The BI function in organizations is often found in market research and strategic planning departments. BI techniques are also being combined with scenarios in a counter-offensive role for risk management⁹³ and to predict a competitor's strategy.⁹⁴ Therefore managers often confuse BI with outward-looking competitor analysis and overlook its links with capacity-building and organizational learning. Leonard Fuld notes that the intelligence audit, which he defines as 'an inventory of your company's intelligence assets,'⁹⁵ is one example of this cross-functional role. Managers' confusion stem from the overlay of Porter's positioning school and military strategy with game theory and the resource-based view of core competences.

BI analysts in a cross-functional role must be aware of these different business paradigms. Analysts monitor what issues are on the agenda, the data and how its collection process works, and can align the strategy outputs with their decision-makers' mind-sets. The last skill, to 'redefine the intelligence problem in the decision-maker's terms,'⁹⁶ is crucial in opportunity analysis. One of the most difficult aspects of this role, however, is the ability to anticipate 'major future decisions.'⁹⁷ The Machiavellian analyst must combine a macro-view of the entire firm and a micro-view of its hierarchies and games. Herring contends that BI must be performed with the 'direct involvement of the management team.'⁹⁸ This demands an understanding of how Anticipatory Management and Strategic Foresight enhance the BI role.

These managerial frames and fields provide the organizational context and rational management structure for BI analysts to operate within. Along with Stevan Dedijer's writings on SI they enable a broader conceptualization of possibilities and more rigorous execution in daily operations of goals, tactics and strategies. Exemplars have certainly appreciated this. For Herring anticipation is 'the ability to assess a current

situation with an intelligent mind and be able to put that situation into a future context' and its application in companies 'is a learned attribute.'⁹⁹ Herring anchors this framework in three functional categories that include Strategic Decisions and Actions, Early-Warning Topics and Descriptions of the Key Players.¹⁰⁰

Richard Slaughter defines Strategic Foresight as the 'ability to create and maintain a high-quality, coherent and functional forward view and to use the insights arising in organisationally useful ways.'¹⁰¹ Several practitioners have recognised the role of foresight. McGonagle Jr. and Vella suggest that CI 'can identify near- and mid-term technological trends impacting direct competitors', that strategic intelligence 'should be providing significant data on futures trends impacting the company' and that 'long-term views' reinforce effective crisis management programs.¹⁰² Strategic Foresight also enables a BI unit to organically evolve from the 'information-based, research library function' that defined many first generation corporate units 'to a program that is delivering forward-looking strategic analysis.'¹⁰³

Many BI practitioners have encountered foresight and futures techniques in their pragmatic form. Foresight during the public literature search allows the practitioner 'to get non-published information straight from the source.'¹⁰⁴ Initial hypotheses during the BI cycle are frequently developed using STEEP (social, technological, economic, environmental and political) factor analysis and forecasting techniques.¹⁰⁵ Scenarios can be used so that 'the intelligence jigsaw is completed several times' from several different perspectives.¹⁰⁶ The BI use of scenarios is closer to an artificially constructed information filter or learning tool than as a planning method.

Craig Fleisher and Babette Bensoussan's 'FAROUT system' is probably the most overt attempt to fuse Strategic Foresight concepts with Business Intelligence. The first of its six major elements is 'Future Orientation'. The authors explain the system is 'designed to assist analysts in discovering what analytical techniques are appropriate for any situation.' For Fleisher and Bensoussan, BI 'must be prospective oriented, looking both deeply and broadly at an indeterminate and uncertain future, and willing to take risks by being both predictive and inventive.' They concur that effective BI 'will be future, as opposed to historically, oriented.'¹⁰⁷

Combining the 'FAROUT system' with Slaughter's depth and long-range views promises to enhance BI applications and strategies. This is because a successful Strategic Foresight intervention goes beyond analysis to 'surface' the underlying conceptual framework. Foresight-enabled BI enables analysts and decision-makers to 'direct their thinking into more future-oriented directions'¹⁰⁸ But as F.W. Rustman Jr. observes, effective intelligence analysts will always divide 'facts, findings, forecasts and fortune-telling.' For the BI and Strategic Foresight practitioner alike, 'once the analyst moves from forecasting into fortune-telling, problems begin to arise.'¹⁰⁹

Personal Qualities of Intelligence Analysts

Frank Watanabe, a member of the CIA's Directorate of Intelligence observes that effective analysis also demands certain personal qualities, project management skills and understanding what intelligence decision-makers actually require.¹¹⁰ Fuld contends that successful analysts merge creativity and problem-solving with strong

interviewing and writing skills.¹¹¹ Practitioners often came from senior management and had lengthy experience in their organization's industry. BI staff at Merck, for example, 'had an average of 25 years of experience in the pharmaceutical industry.'¹¹²

BI practitioners with a military or intelligence background sometimes persuaded 'more on guilt than intimidation.'¹¹³ Meyer suggests that intelligence personnel are often in a natural conflict with policymakers and executive decision-makers, usually because they have to deliver the bad news.¹¹⁴ 'A good intelligence officer,' Meyer states, 'is fundamentally an uncomfortable function . . . yet these are precisely the qualities that make the intelligence officer so good at what it does . . . uncomfortable, dissatisfied people who are the most receptive to new ideas and information.'¹¹⁵

Creating a BI Unit in Organizations

Prescott and Gibbons define the BI function in an organizational setting as 'a formalized, yet continuously evolving process by which a management team assesses the evolution of its industry and capabilities and behavior of its current and potential competitors to assist in maintaining or developing a competitive advantage.'¹¹⁶ Gilad notes that 'the development of a business intelligence function will be an evolutionary process and the function may end up anywhere within the organization'¹¹⁷

Tyson found that the BI unit often begins as a 'quiet, private network.'¹¹⁸ A project convener establishes the organization's collection channels including 'an 800-number, a CI e-mailbox, and systematic sales and marketing briefings.'¹¹⁹ Usually the convener is driven by curiosity and 'making inquiries on the borderline of his or her official job description.'¹²⁰ In their initial phase BI units are often clearinghouses for ad hoc queries and cross-departmental requests. The new BI analyst usually tracks demographics and socioeconomic indicators, investment analyst reports and public-entity filings and searches news and journal articles.¹²¹

Gordon suggests that the BI function may encompass objectives, beyond a narrow-focused CI emphasis, as the organization evolves: 'such as identifying and analyzing acquisition targets, retaining high market share levels, finding approaches to increase overall industry profitability, gathering 'nice-to-know' information as a security blanket or developing tactical competitor and customer information.'¹²² Liautaud found a range of structures, from departmental and complex BI to a centralized-decentralized spectrum and a 'help desk' support approach.¹²³

The most effective BI units, Liautaud found, embodied the 'information democracy' ideal rather than the extremes of 'information anarchy' versus 'information dictatorship'.¹²⁴ Herring demands that an effective unit meets four quantitative criteria: time savings, cost savings, cost avoidance and revenue enhancement.¹²⁵ This is because the intelligence cycle can be a trade-off between efficiency and effectiveness.¹²⁶

Business Intelligence Failures

Perhaps reflecting on the rise-and-fall of strategic planning, writers on Business and Competitive Intelligence have paid attention to how implementations can fail.

Meyer summarizes a range of BI failures that can occur between the analyst and the executive decision-makers. Policymakers can interfere with the intelligence process by ignoring the intelligence reports (passive) or not acting on the intelligence they receive (active).¹²⁷ Planned leaks or political implementation can skew the interpretation of intelligence to normative ends.¹²⁸ Intelligence analysts can sabotage their own work by withholding 'judgments and projections from their policymakers because of their own distaste for what they know or believe these policymakers will do.'¹²⁹ They can become addicted to secrets or focus on secrets and miss relevant information from public sources.¹³⁰ Finally, policymakers very rarely share public credit for intelligence breakthroughs.¹³¹ Instead they find that the secretiveness of these operations means 'intelligence outfits make excellent scapegoats.'¹³²

For Pollard, most BI failures 'have not been failures in collection but failures of organization and evaluation, which is why epistemological concerns are so important.'¹³³ Epistemological concerns, the management's ontology and blind-spots also influence the design of a BI template. Pollard advises that a backcasting exercise with considers the processes of information gathering, scope and weighting is crucial.¹³⁴ Tyson and Swanson also suggest 'a mission statement be developed for the intelligence process' to ensure that the CI function remains aligned with 'the business objective.'¹³⁵ Albrecht warns explicitly that market language may conceal 'inhumane' assumptions.¹³⁶

Tyson and Swanson warn that senior management in a BI unit can become over-fascinated with new technology. They witnessed some common errors in ERP-oriented implementations: the system was 'built for Data instead of Information', the staff had 'unrealistic expectations', there was 'insufficient user buy-in' and 'no senior management commitment.'¹³⁷ Seeking patterns in industry dynamics and the information technology that monitors them can be a dead end. Slywotzky reminds us that BI maps 'patterns of internal organizational behavior' that 'are rooted in human nature . . .'¹³⁸

BI and Foresight Applications I: Mergers & Acquisitions

BI and CI have been deployed by consultants during Mergers & Acquisitions (M&A) bids. Karl Albrecht estimates that the worldwide M&A market in 1998 was estimated at \$US2.2 trillion dollars.¹³⁹

A firm in a mature market may use BI 'to diversify away from the existing market' by 'scanning the environment for profitable industries and acquisition candidates.'¹⁴⁰ This scanning may be relatively unstructured if the BI practitioners are searching for innovative companies or 'acquisitions outside their traditional line of business.'¹⁴¹ Companies that enter into strategic alliances can also use BI as a form of information control during the deal negotiations. They can minimize 'negative bleed-through (information about itself going across to its partner' and maximize 'positive bleed-through (information about the partner being collected).'¹⁴²

Practitioners use CI techniques to uncover 'interlocking directorships and critical relationships' which may be deal-killers.¹⁴³ Management and other stakeholders may

be analyzed to discover competitors and reveal possible complementors.¹⁴⁴ M&A support staff may also use computer simulations and scenarios.¹⁴⁵

BI and Foresight Applications II: Environmental Scanning and the Corporate Radar

BI practitioners have adapted insights from Environmental Scanning (ES) and strategic intelligence/planning into the Corporate Radar (CR) tool.¹⁴⁶ Albrecht defines the CR as ‘the disciplined process of investigating, studying, analyzing, and thinking about the various dimensions of your business environment’ and advises that it ‘must be turned on and scanning full time.’¹⁴⁷ For Choo the advantage of the CR is that enables ‘information from various sources can be integrated into a coherent whole for strategic planning.’¹⁴⁸ Herring connects ES with the early warning systems and threat assessment indicators used in the intelligence community. Analysts must ‘continuously search for indications that these threats might be developing. Then be prepared to act on them at the earliest possible time.’¹⁴⁹

CR-enabled ES enables practitioners to be ‘grounded in reality and may enable us to see what our competitors may not see.’¹⁵⁰ It scans for ‘previously obscure competitors’ who ‘can emerge to fundamentally reshape an industry.’¹⁵¹ A ‘forward-looking management team’ perceives the unperceivable through actively scanning the environment for ‘a combination of conditions and triggers’ that ‘creates new opportunities for creating value growth and capturing strategic control.’¹⁵² This forward-looking capability links ES with Issues Analysis,¹⁵³ since both techniques ‘can lead to the requirements of on-going monitoring and tracking of the competitive environment.’¹⁵⁴ Lexis Nexis uses CR-enabled ES in this manner to track brand values, new technologies, new product development, relevant legislation, and intelligence in different domains (customer, sales and marketing).¹⁵⁵

Often there are no ‘correct’ or ‘right’ answers because situational contexts can generate co-emergent patterns ‘depending on the other conditions or triggers with which it combines.’¹⁵⁶ Andy Grove, Intel’s former chief, warns of ‘strategic inflection points’ that redefine industry trajectories and technology paths.¹⁵⁷ Analysts must ‘consider not only what happened, but how fast it happened and to what degree.’¹⁵⁸ However Proctor & Gamble executives offer one solution to looming ‘strategic inflection points’: they use BI to boost ‘the quality of our options analysis.’¹⁵⁹

ES is probably the most widely adopted Foresight tool in corporations yet it also possesses significant dangers. CR-enabled ES must be done ‘on an ongoing basis to achieve a sustainable advantage’¹⁶⁰ but this constant stress may trigger analytic overload for the team. The ES process can create ‘input, output and process failures’¹⁶¹ that may threaten data reliability. ES analysts do not scan a benign situation and must be on the outlook for active and passive disinformation.¹⁶²

Finally, CR-enabled ES is only one component of successful execution. Slywotzky contends that ES personnel in a commercial setting require ‘a thorough, strategic understanding of your customers’ and ‘a rich vocabulary of Value Migration patterns from other industries.’¹⁶³ Motorola’s use of CR-enabled ES and Total Quality Management is a pivotal example. Motorola studied the delivery systems of Domino’s

Pizza and Federal Express to improve the customer delivery and logistics management of its cellular telephone division.¹⁶⁴

BI and Foresight Applications III: Shadow Marketing

Intelligence and marketing functions are often closely linked together in BI literature. Novice researchers may equate market research with CI.¹⁶⁵ A benchmarking study found the BI function in the marketing/marketing research (46%) or sales (14%) departments.¹⁶⁶ The two fields are quite different.

One specific fusion of BI and marketing techniques has been extensively written about: the use of *shadow marketing* as a 'reverse competitive intelligence technique.'¹⁶⁷ The technique has been traced to the role of the 'shadow cabinet' in the United Kingdom's Westminster system of governance.¹⁶⁸

Gordon defines shadow marketing as a way 'to monitor and analyze a key competitor, prevent major unpleasant surprises, prepare its business plans, and recommend changes in direction that capitalize upon that competitor's weaknesses.'¹⁶⁹ Authors often use sports analogies because analysts monitoring their competition 'must, in a very real sense, become the competitor.'¹⁷⁰

This observation hints at, but fails to explore, the conceptual links between shadow marketing, role-playing simulations and action learning pedagogies. The closest that many companies have come to action learning techniques is to establish a 'demo room' to benchmark competitors' products in an experiential setting.¹⁷¹ This environment enables practitioners to present competitor profiles and executive briefings to decision-makers under the guise of organizational learning.¹⁷² The 1980s popularity of Japanese writings in strategic management literature also shifted the focus from 'top-down' war-gaming to knowledge-oriented 'bottom-up decision making.'¹⁷³ The link between BI, strategic intent, 'explicit-implicit learning' and 'learning capabilities' gained wider prominence in the late 1990s.¹⁷⁴

BI and marketing are more likely to involve online databases¹⁷⁵ or use 'semantic profiling' to model how language patterns can reveal different market segments.¹⁷⁶ BI and Strategic Foresight also strengthens Customer Value Analysis, because 'to understand the value of the customer, you must look not only back in time, but also forward in an attempt to predict his or her future potential.'¹⁷⁷

One other fusion hints at how BI and marketing may co-evolve in the future. In the early 1990s brand marketers began using anthropological techniques on a mass-scale to track trends and monitor the diffusion of iconography from subcultures into the early mainstream. BI has also used anthropological insights but for the purpose of capturing, encoding and transmitting knowledge in diverse environments. Galvin believes that anthropological knowledge will be crucial 'as we expand our awareness of this very complex, multi-faceted world.'¹⁷⁸

BI and Foresight Applications IV: Patent Searches

However disaster can result if the marketing department becomes disengaged from the rest of the organization. NutraSweet narrowly avoided this fate when it learned in 1991 that the U.S. Food & Drug Administration was considering the approval of Johnson & Johnson's rival product Sucralose. NutraSweet owned 'two-thirds of the then \$1.5 billion market.' The marketing department suggested a multi-million dollar 'defensive marketing blitz.' Instead NutraSweet's BI staff did a patent search and uncovered the reality that the FDA was unlikely to approve Sucralose.¹⁷⁹

Pharmaceutical and high technology companies use patent searches to manage their patent portfolios, engage in technology competition analysis and identify profitable new ventures.¹⁸⁰ This BI application links forward-looking innovation, fast cycle times and the traditional futures domain of technological forecasting. However methods have evolved. Companies now identify the 'scientific domains that competitors are pursuing' by monitoring corporate announcements and user feedback forums, and 'listening to the silence.'¹⁸¹ Merck and SmithKline Beecham are two companies that identify opportunity areas and track patents through an in-depth literature review that creates a 'high citation index.'¹⁸²

However patent search strategies can now also involve counterintelligence and disinformation gambits. Gordon notes that 'companies in the pharmaceutical industry are known to patent errors, perhaps in the hope of misinforming competitors or refining the mistakes into workable products later on.' Over a long period of time this 'tit-for-tat' strategy (popular in game theory circles) creates an industry environment where 'some companies are no longer patenting their innovations, preferring to surprise the market and develop a strong positioning in the minds of customers before competitors have had a chance to emulate them.'¹⁸³

Combining patent searches with product deconstruction and marketing initiatives can generate a broad and defensive strategy. Xerox discovered that Kodak copier sales people were being trained to service its products. It analyzed the Kodak product through reverse engineering, examined after-sales service, and then quickly introduced a Total Satisfaction Guarantee Program that pre-empted Kodak's similar offering by several months. Kodak lost the element of surprise and its copier division was later sold to Danka Business Systems PLC.¹⁸⁴ Patent searches remain one of the most oft-cited intelligence tools for anticipating surprise moves that alter industries.

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