

# Strategic Decision Making Using Real-Time News Patterns



September 2011

# Strategic Decision Making Using Real-Time News Patterns

September 20, 2011

Copyright 2011 Alan S. Michaels & James J. Andrus

## Abstract

To support executive decision-making, corporations need the proper strategic planning framework and informational processes, including a dynamic feedback loop which converts global news articles and other content into strategic intelligence which confirms or challenges corporate and business unit assumptions about the changing external environment.

The goal above has been difficult for corporations to achieve in the past because of several major obstacles which are described in this article. More importantly, this paper describes a new integrated solution: A Real-Time Corporate Planning Management Solution which enables organizations to quickly build and leverage a robust corporate planning framework aligned with a knowledge-building process that helps executives make better decisions.

The theoretical foundation for this integrated solution is Michael E. Porter's five-forces industry framework.[1] The informational content for this solution includes two components. First, industry analyses for the top 12,000 industries, covering more than 98% of the global economy. Second, and the more dynamic part of this solution, is the real-time "swarm intelligence" that can be distilled from digital news, blogs, videos, and other social media. The swarm intelligence is used as part of a continuous feedback loop to support or challenge strategic assumptions and to provide a more up-to-date understanding of industry structure to enable executives to make better decisions. Holistically, we call each industry analysis with real time swarm intelligence: Real Time Industry Building Blocks [TM]; and our holistic case study which combines these processes: the IBB-NP Real Time Corporate Planning Management Solution [SM].

This article is written primarily for senior business executives and line-of-business managers. For executives who want their company to build their own Real-Time Corporate Planning Management Solution, this paper includes a practical case study and how-to instructions with sufficient clarity for your CIO to get started.

Full disclosure: The case study presented in this document, which integrates two previously distinct information services, necessarily mentions the businesses of the authors - and we hope this is not viewed as too much of a sales pitch in what we believe to be a serious academic article. In addition, to present our real case study, it was necessary to use an industry framework. If you are anti line-of-business frameworks in general, or anti Michael Porter's five forces industry framework in particular, the case study portion of this article is not for you because the innovation described in this article specifically combines structured (five forces) industry content with unstructured global news by using pattern discovery technologies and a dynamic feedback loop to provide real-time situational awareness for superior decision making.

*Keywords:* corporate strategy, industry analysis, strategic planning, industry trends, news patterns.



## *Sections*

- **Problem Identification: Current Barriers to Making Informed Strategic Decisions**
- **Establishing a Corporate Planning Framework That Works**
- **Planning With Uncertainty: Scenario Planning Best Practices**
- **Industry Information Required to Support Strategic Decision-Making**
- **Converting Global News & Social Media Data into Strategic Intelligence**
- **Case Study: Creating a Real-Time Corporate Planning Management Solution**
- **Conclusions**
- **References**

### *Problem Identification: Current Barriers to Making Informed Strategic Decisions*

Some of the most important reasons why many executives are not satisfied with the quality of the strategic intelligence they have access to when making decisions today include:

#### **1. Suboptimal Corporate Planning Framework**

- Many companies have no clear list of their lines of business and they make plans based on their current organizational structure. Step #1 for successful corporate planning begins with a clear identification of the company's lines of business. Skipping this step typically ensures that the planning process will result in suboptimal results because the business unit (industry) is the arena where true competition takes place, and without a line-of-business focus, strategic planning implodes into an organizational budgeting exercise.
- Many companies do not have one holistic, up-to-date, view of all of the component parts of their corporate plan which should include:
  - i. One Corporate Strategy (and one or more Group Strategies, if necessary)
  - ii. Business Unit Strategies
  - iii. Cost Center Plans
- One or more lines of business lack an objective industry analysis and, therefore, their planning process is too often an overly subjective view of the environment full of wishful thinking by internal management.
- From an implementation point of view, too many plans are long-winded prose, rather than bullet points which go directly to the heart of the matter. Plans should be designed to make it simple for colleagues from linked business units and cost centers to systematically leverage the planning insights. For example:
  - i. If each line of business in the company identified IT trends relevant to that business unit, the company's IT department could quickly address and add to those trends.
  - ii. If each line of business in the company identified its current and potential competitors, a centralized market research and competitive intelligence group could systematically analyze the competition across the entire organization. (The same concept is true for monitoring business partners, business customers, and vendors.)

#### **2. Poor Scenario Planning**

- Many companies do not take the time to think objectively and strategically about the future of the industry in terms of systematically building potential industry scenarios
- Some companies that do make the time to build industry scenarios lack sufficient scenario planning skills to construct an array of strategically relevant scenarios. Well thought out scenarios are extremely important to test the viability of current strategies in different situations.

- In some cases, companies do not have sufficient industry knowledge in terms of potential paradigm shifts that might result from direct industry shifts and/or from technology shifts.

### **3. Most External Industry & Company Information Is At Too High a Level to Be Useful**

- There are hundreds of information companies which say they provide "industry" information. Unfortunately, the list of firms that actually provide five forces level or true line-of-business level "industry" information for the global economy is very short.[2] Most information vendors are limited to providing high-level sector or industry group information for one or both of the following reasons:
  - i. Many information vendors are dependent on government-developed industry classification systems (such as NAICS, SIC, ISIC, NACE, ANZSIC, etc.). These industry taxonomies typically have a narrow geographic scope, and they typically divide the global economy into somewhere between 300 and 1,175 industry groups, with NAICS the most granular government-developed taxonomy.[3] These vendors typically market their industry group data as "industry" information.
  - ii. There are many other information vendors that assign companies into industry sectors and then market the grouped company data as "industry" data, as well. These information providers typically divide the global economy into somewhere between 10 and 950 industry sectors, providing even less granularity than NAICS, and, therefore, it too is suboptimal for line-of-business managers in need of strategically relevant industry information at a lower level.

To help clarify the difference between line-of-business-level industry information and higher-level industry information, which of the following is, in fact, a line-of-business-level industry?

- Financial Services?
- Banking?
- Commercial Banking?
- Cash Management?
- Wholesale Funds Transfer Services?

The correct answer: Wholesale Funds Transfer Services. The others are all different layers of arbitrary industry sectors, industry subsectors, or industry groups. Other (five forces level) industry examples include: frozen pizza manufacturing; smartphone manufacturing; commercial automobile insurance; graduate business school MBA-degree program services; discount brokerage services; argon gas manufacturing; and six sigma training services.

### **4. Information Overload In Terms of Global News, Social Media Information & Other Data**

- Corporate planners, corporate marketing professionals, and business executives face a massive challenge in keeping an eye on current and potential competitors, current and potential business partners, and current and potential vendors - each of whom may be located anywhere in the world, and each of whom write articles and are written about.
- Information overload is commonplace; and most companies do not have the systems necessary to intelligently identify meaningful patterns of global news and social media content necessary to convert this massive data into useful intelligence.

Information overload provides two kinds of danger: reacting too slowly to real changes and reacting too quickly to meaningless noise. Without automated algorithms capable of analyzing swarm intelligence, it's hard to tell the difference between real industry changes and false positives.

### **5. Corporate Planning, Industry Analyses, and Global News Input Are Rarely Aligned**

- The corporate planning framework should be used as the guiding framework for aligning industry analyses, building industry scenarios, and designing the company's information architecture, including a feedback loop to greatly enhance corporate knowledge for better decision making. Today, this alignment is rarely achieved in most companies.

## *Establishing a Corporate Planning Framework That Works*

The corporate planning framework described by Michael E. Porter in his landmark book “*Competitive Advantage*” [4] is one of the best and most widely used formal corporate planning frameworks used by corporations around the world, although most companies use their own (ad-hoc) informal corporate-planning process which they believe fits their needs based on corporate culture, corporate skills, and a mixture of planning guru preferences.

At its core, however, all corporate planning frameworks should be perfectly clear in defining what industries (lines of business) the company currently competes in. The goal of corporate planning is to best align corporate resources to maximize corporate objectives in terms of the sum of these lines of business, including changing the portfolio of businesses the company is in, when required.

Identifying and understanding each industry in which the company competes should be planning step one.

For decision makers, understanding the word "industry" is vital because an "industry analysis" is the starting point for understanding any business. Unfortunately, around the water cooler, the word industry can be used freely to mean most anything. For business executives and professional planners, a more crisp understanding is required to understand what constitutes the right level at which to perform an industry analysis.

Today, the term "industry" is used so loosely it can be applied to anything from frozen pizza manufacturing (a true industry) to all of food manufacturing (an industry sector); from wholesale funds transfer services (a true industry) to all of financial services; from tablet computer manufacturing (a true industry) to all IT hardware manufacturing.

A good working definition for the word industry is, "One or more companies (and / or sole proprietors, partnerships, government agencies, non-profits, consortiums, etc.) which provide one or more external customers (individuals, companies, governments, etc.) one or more products (and / or services) which are clear substitutes, and which require similar activities to produce the product or provide the service. (For example, sugar and the sugar substitutes represent strategically different industries.)"

With the understanding that a CEO or a group executive is responsible for some number of lines of business (industries), this leads to a very important observation. Specifically, there are three basic types of strategic plans used within the overall corporate planning framework; and each type of plan requires its own planning process because different information is required by each type of plan to support different types of decisions. In short, the corporate planning framework should include:

1. Corporate / Group Planning: *for the company as a whole, and for each organizational group*
2. Business Unit Planning: *for each line of business in which the company competes*
3. Cost Center Planning: *for each department which performs a set of activities for two or more lines of business*

<b>Planning Processes</b>	<b>Type of Plan</b>	<b>Main Objective(s)</b>
Corporate Planning Process & Group Planning Process	Corporate Plan Group Plan	Optimize Business Mix Leverage BU Interrelationships
Business Unit Planning Process	Business Unit Strategic Plan with: a) Industry Analysis b) Business Unit Strategy	Competitive advantage - Optimal competitive position - Perfect alignment with objectives and positioning
Cost Center Planning Process	Cost Center Plan	Perform Shared Activities for BUs

Note: The Corporate Planning Process includes everything required by the Group Planning Process plus a few extra sections to ensure that all corporate activities (like raising capital) are included in one holistic corporate plan. A simplified view of the overall corporate planning process is shown below.



Monitoring external events (which feed the information feedback loop) has become an enormous challenge in the new global economy saturated with and confused by media’s continuous flood of information. How to track news and social media and to best leverage this information within the corporate planning framework are discussed in detail later in this article because it requires its own set of processes.

To underscore the key point of this section on developing a corporate planning framework, the fundamental organizational entity that needs to be analyzed and monitored is the business unit (line of business). A company’s lines of business are the company’s fundamental building blocks for creating value. CEO’s, group executives, and cost center managers all need to understand the industry dynamics of each industry they compete in when making strategic decisions.

Appreciating the high importance of industry (line of business) level information is, of course, obvious to line-of-business managers because they have to win in the head-to-head competition in the marketplace to be successful.

## *Planning With Uncertainty: Scenario Planning Best Practices*

A key part of any corporate planning process should include scenario planning because industry structure is always subject to change, and tomorrow's competitive advantage is a function of tomorrow's industry structure. Scenario planning includes far more than traditional contingency and backup planning, which represent a small subset of tactical issues to consider.

A much more holistic view of scenario planning is well defined in Michael Porter's book, "*Competitive Advantage*" in the chapter titled, "Industry Scenarios and Competitive Strategy under Uncertainty" [5].

According to Porter, scenario planning includes identifying:

- Industry known constants
- Industry known trends
- Industry unknowns (which make up the scenario variables).

In concert with trying to influence industry structure, it is also important to objectively and systematically predict what the future industry structure will look like in order to best develop strategies that will be successful in the future.

In addition to understanding an industry's traditional component parts, because of globalization and the increased use of technology which enable previously disconnected industries to become connected, understanding the industry's broader environment is more challenging than ever. The greater the industry scope and relevant ecosystem that needs to be analyzed, and the more technologies which need to be tracked, the greater the global market intelligence challenge.

All other things being equal, competitive advantage will flow to those companies that have a better understanding of the true emerging industry structure unfolding, resulting from all the industry forces at work, before competitors catch on to the reality taking place. Continually testing key hypotheses about industry trends is now an easily acquired capability.

Best practices for scenario planning (now, more than ever) requires an information feedback system for each line of business in which the company competes. For those companies which use a common template for each business unit strategy, that template should already include a section on industry scenario planning with an all-important feedback loop. This article, in an effort to expand best practices to improve results, recommends a formal information feedback loop which systematically adds new structured five-forces industry information which leverages the massive amount of unstructured global news and social media content created daily, including the results of hypothesis testing of industry scenario variables on an ongoing basis.

Information feedback loops are vital to re-evaluate strategic assumptions as time goes by.

Dashboards today mostly use internal metrics to track events which have occurred within the company. To complement internal dashboards and scorecards, companies should access external industry dashboards which have built-in industry information feedback loops.[6] External industry dashboards which are constantly refreshed with real-time industry trending information will play an increasing role for building and updating industry scenarios.

Industry-centric dashboards which track external events are far more likely to discover radical and discontinuous changes that can potentially change industry structure and, therefore, change the route to competitive advantage. Industry dashboards are superior for monitoring strategically-relevant information useful for industry scenario planning than are generic dashboards because an industry dashboard will specifically focus on trends impacting the industry's five forces. Not all macroeconomic factors, and not all technology trends, are relevant to each industry, which is why an industry focus is critical.

## *Industry Information Required to Support Strategic Decision-Making*

On an ongoing basis, news and information are relevant to understanding changes in industry structure, the competitive playing field.

Information architecture, at a very high level, refers to the categorization and storage of data such that the right information can be accessed by the right people, at the right time.

Lines of business represent the fundamental building blocks of any corporation, which is why information about a company's lines of business (the industries they compete in) should be the *informational building blocks* of the corporate information architecture designed to support strategic decision making.

Specifically, the acquisition and categorization of news and information that impacts each line of business should include external industry information about:

1. Current competitors (including companies and their brands)
2. Potential competitors
3. Customers (including: industry channels, buyers and end users)
4. Vendors / suppliers
5. Substitutes
  - Industry complements
  - Industry product types (product and/or service and/or solution varieties)
  - Industry buyer purchase criteria and channel purchase criteria
  - Trends: Industry Trends; Economic Trends; Geopolitical Trends; and Technology Trends
  - Industry success factors
  - Industry uncertainties (often used as scenario variables)
  - Additional industry information

Major advantages of the line-of-business-focused view include:

- Industry (line of business) information can be grouped into higher-level industry clusters and industry sector information, when required. The reverse is not true.
- Line of business information can be linked to the company's organizational units - and the objective external industry information does not change dramatically after each company reorganization, merger or acquisition.
- True head-to-head competition takes place at the line-of-business level, which is why better decisions can be made with information at this level. A few information vendors now provide information at the five forces level, thus removing the major reason why many companies have had difficulty developing true line-of-business plans.

Automated solutions are now a necessity for most companies to monitor news and information globally; and information architectures need to include accessing information from external sources.

Information-search vendors can search and retrieve information based on keywords. When developing keyword lists to use with search engines for accessing relevant industry data, it is often helpful to group keywords into three groups.

1. Generic keywords used for any industry, in conjunction with the industry name
2. Industry-specific keywords defined by an analyst or industry expert who understands the industry
3. Company-specific keywords added to reflect company-specific influence on the industry

Using keywords and other input to guide search-based information services is discussed later in this article.



## *Converting Global News & Social Media Data into Strategic Intelligence*

### **A Short History of Recent News Evolutions**

All leaders and analysts who make strategic decisions read the news. News is that information source that defines the current situation, offers support to, or challenges, current strategic plans, and introduces surprises that no planner ever contemplated. Therefore, relevant news seeking and uptake is a vital part of any strategic decision process. The Internet revolutionized the news process, placing new challenges on decision makers. Since the advent of the Internet, news has progressed through these major evolutions:

- News aggregation services provided a single source for the content of thousands of news organizations.
- Blogs became a new source of news, allowing subject matter experts the means of publishing news and analysis under their own identities.
- RSS feeds enabled the wide syndication of news from original content providers.
- Google Alerts provided a free news aggregation service based on Google search power as a challenge to fee based news aggregation services.
- Social media added original content creation pertaining to events as they are observed and recorded by anyone with a smart-phone or an Internet connection.
- Tablet devices combined mobility with larger screen formats, approaching the user experience of reading newspapers and magazines.

All through these steps of news evolution, the volume of news content has exploded. It is no longer possible for a decision maker to go to a few trusted publications to learn all that is needed to know. Even if one were to seek the news from the expansive scope of Google Search, decision makers would be limited to asking the right question. Inserting the correct search query is impossible for unimaginable events.

In addition to missing relevant information, there is the issue of data overload. For example, in the situation of a large semiconductor company with worldwide interests, the volume of potentially relevant news was over 5,000 articles per week in 2002. Today, the article volume number has grown by over 10 times. [7]

### **The Utility of Pattern Recognition in News Related Strategic Decision Making**

Internet created and distributed news is in sync with the ideas of Friedrich Hayek, a Nobel Laureate in Economics.[8] Hayek postulated that “Almost all information that matters is decentralized, that it exists in the minds of millions of participants in an economy. Therefore, the challenge is how to best maximize the benefits of decentralized information that exists as millions of single data points spread across the globe.” Today that decentralized universe of “information that matters” is often reflected in modern news. The challenge is to capture and distill useful patterns out of all our modern news flows.

Logical Michael Porter structures (as well as the frameworks proposed by other management gurus) for analyzing any industry and for strategic planning can be considered a pattern for business success. Patterns are an important part of any survival strategy. In fact, the human brain is a massive pattern seeking engine, attempting to connect sensory inputs with known patterns for appropriate responses.

To address the volume and scope of news as it pertains to competitive environments, News Patterns sequentially developed news analysis technologies that seek patterns and significant relationships among large volumes of news articles. (For this paper, articles also include blogs and social media content.) With this pattern discovery, news can be packaged with useful context and trending that needs to be considered in any news insight process.

In the news patterning process, these steps are executed in a continuous mode as news content is created and pushed to the Internet.

- Collection from a wide diversity of sources including dedicated news sites, blogs, video sites, Google Alerts and Twitter.
- Filtering of articles into useful topic folders. These folders often correspond to industry competitive forces like current competitors, potential competitors, customers (including: channels, buyers and end users), vendors, substitutes, industry products and services, complements, and additional industry information.



- Discovery of patterns among articles and topics using sophisticated pattern seeking algorithms.
- Transformation of the topic folders into organization and visualization structures that highlight relevant topics, articles, context among topics and urgencies among topics.
- Deployment of patterns and news to all the information devices which are integral to strategic decision makers including tablet and smartphone devices. In these patterns are useful context, urgencies, relevancies, real-time situational awareness, and anticipations of future scenarios.
- Hypothesis testing on an ongoing basis of expected trends and market scenarios
- Interactive human behavior captures and uses results to continually make patterns smarter and news more relevant.

With an operational news patterning network, companies can complement their corporate planning process with real-time situational awareness that will either support the ongoing corporate plan or challenge it.

As mentioned earlier, each line of business should have its own set of folders to test its hypotheses and support or challenge its plans.

By using the power of pattern discovery, a decision maker can be closer to the actual news signals and be more independent of up-stream editors who may be biasing what is shared, or shielding bad news.

## ***Case Study: Creating a Real Time Corporate Planning Management Solution***

Real time corporate planning management solutions represent the next frontier in executive management tools. Real time corporate planning management solutions do not imply that corporations should change their strategies on a daily basis. Rather, they enable executives to guide their corporate strategies in real time by leveraging global information in ways not possible without an automated solution that converts global data into strategically relevant intelligence aligned with the company's planning framework.

Moving beyond traditional corporate dashboards which mostly analyze internal data, real time corporate planning management solutions are far more focused on the pulse of external global information with an emphasis on intelligence that is strategically relevant for defining and anticipating future industry structure.

**Step 1 - Ensure your corporate planning framework is in place**

**Step 2 - Optionally use IndustryBuildingBlocks.com for industry information and default folders**

**Step 3 - Determine the desired number and type of news folders to create**

**Step 4 - Use NewsPatterns.com to collect relevant information for each folder created above**

**Step 5 - On an ongoing basis, as necessary, update strategic plans, folders and language used.**

The steps below provide a (clear, but simplified) step-by-step roadmap for implementing a real time corporate planning management solution in your company using <http://IndustryBuildingBlocks.com> and <http://www.NewsPatterns.com>.

### **Step 1 - Ensure your corporate planning framework is in place**

- 1 Corporate Plan (which should include the components below)
- X Number of Group Plans
- Y Number of Business Unit Plans (identifying the lines of business is the key first step)
- Z Number of Cost Center Plans

**Step 2a - Optionally use IndustryBuildingBlocks.com for an analysis of your company** in terms of an objective list of the lines of business in which you compete. This list usually differs from what companies develop themselves because they often base their list on their organizational structure, rather than objectively defining industry boundaries based on using Porter's five forces framework.

**Step 2b - Optionally use IndustryBuildingBlocks.com for objective industry information** for each line of business in which you compete. The analyst-developed industry information you can access via IndustryBuildingBlocks.com includes:

- Industry Definition, Industry Size in Terms of Revenues, and Industry Growth Rates
- Industry Competitors (by top Corporate Parent\*; by Intermediate Parent\*; and by Brand)
- Industry Product & Service Segments
- Industry Customer Information
  - Industry Channel Segments\* and Industry Channel Purchase Criteria
  - Industry Buyer Segments\* and Industry Buyer Purchase Criteria
  - Industry End Users\*
- Trends That Impact This Industry
  - Industry-Specific Trends
  - Technology Trends That Impact This Industry\*
  - Economic, Geopolitical, and Demographic Trends That Impact This Industry\*
- Industry Supplier Types\*
- Industry Substitute Products and Services\*
- Industry Complementary Products and Services\*

- Industry Success Factors
- Industry Uncertainties (often used as scenario variables)
- And additional industry information.

*\*Note: the items flagged with an asterisk can potentially leverage previously defined folders which are relevant to more than one industry.*

**Step 3 - Determine the desired number and type of news folders to create.** These folders will be used to collect relevant information on an automated basis. Companies might well establish, at a minimum, one main folder for each of the plans (entities) defined in Step 1 above. Specifically, the minimum number of main folders should include:

- 1 Corporate folder [for example: the XYZ Company folder]
- X number of folders including one for each Group [Ex: XYZ Mobile Division folder]
- Y number of folders including one for each Business Unit [Ex: Tablet Manufacturing folder]
- Z number of folders including one for each Cost Center [Ex: XYZ Marketing folder]

For this simplified case study, we will determine the folders (subfolders) to be created for one line of business. The business unit is the fundamental entity about which information should be assembled because it is at this level that true competition takes place. (Corporate and group information is mostly the result of combining business unit information and analyzing the interrelationships between them.)

In this example for XYZ Company's "**Tablet Computing Device Manufacturing**" line of business, sample questions the management team might be interested in (on an ongoing basis) because they will help determine future industry structure, include:

1. **What are current competitors up to?**
2. **What new substitutes and which potential entrants might alter industry structure?**
3. **What is happening regarding supplier products, complements, and industry trends?**

### **Industry Topic Folders for Tablet Device Industry**

At this stage of a continuous industry awareness process, news, in all its forms, is often used as a basic intelligence input. To begin with, create folders for each industry competitor.

For each competitor folder, the folder is defined by the minimal number of keywords that will usefully collect news about the competitor while filtering out unrelated news information. There is a certain art in these keyword definitions. Keyword definitions that are too general will create folders with excessive irrelevant news items. Keyword definitions that are too narrow will block many interesting and relevant news articles. In addition to the company name definitions, these folders will also be constrained by news targeting a particular line of business. In the case of this example, that business line is "Tablet Computing Device Manufacturing". Therefore, for this competitor category of news folder, the basic form of the keywords defining the subfolders will be: "COMPETITOR NAME" AND "INDUSTRY NAME". In our example: "XYZ Company" AND "TABLET".

One additional adjustment that might be needed in our basic competitor folder definition will be to compensate for tablet device names that are synonymous with "tablet computing device" such as the Apple iPad. In the situation of the iPad, there are many news articles where iPad is used with no reference to the word "tablet". Therefore, in defining the Apple competitor news folder, this basic keyword formula would be used: (Apple AND tablet) OR iPad.

With the activation of news collections into competitor folders, news articles begin to define the public meaning of COMPETITOR AND TABLET, as defined by news. Of course, as articles are deposited into the competitor folders, other words beyond COMPETITOR AND TABLET are also

drawn into the competitor folders. These words can be part of article titles, article descriptions, article bodies and even tweets. Many of these words will be used as part of trend discovery processes.

The news folder creation process for SUBSTITUTES and POTENTIAL ENTRANTS is very similar to the formulation of the COMPETITOR news folders. In our tablet example, substitute folders for “netbook” devices and “Chromebook” devices would be created. The creation of folders for vendors, complements, and known relevant trends or market influences is accomplished in the same manner. For example, in our tablet device line of business, folders would be composed to reflect the influences of operating systems on the tablet industry. Currently, the relevant operating systems for tablet devices are iOS (Apple operating system), Android (OS created by Google), Windows (Microsoft OS) and WebOS (HP operating system.)

At this point in assembling a news pattern network for the purpose of informing and challenging the tablet device manufacturing line of business, the following news folders (defined by keywords) are a representative assemblage of informative strategic planning topics used to attract news items in the context of tablet devices. Specifically, the initial set of 58 folders might include:

COMPETITORS	POTENTIAL ENTRANTS	SUBSTITUTES
* Acer	* Amazon.com	* Ultrabook
* Apple OR iPad	* Cisco	* Chromebook
* Archos	* Oracle	* eReader
* ASUStek	* Nokia	* Kindle
* Dell	* Sony	* Laptop
* Fujitsu		* Netbook
* Hewlett Packard OR HP		* Nook Color
* HTC		* Smartphone
* LG		
* Lenovo		
* Matsushita		
* Motorola		
* Research In Motion OR RIM		
* Samsung		
* Siemens		
* Stream TV Networks		
* Toshiba		
* ViewSonic		
* Yuckyung		
SUPPLIER PRODUCT [ Mobile O/S ]	SUPPLIER PRODUCT [ Tablet Processing Chips ]	COMPLEMENTS [ Applications ]
* Android	* AMD	* Business
* iOS	* Intel	* Camera
* WebOS	* Nvidia	* Cloud
* Windows	* Qualcomm	* Games
	* Texas Instruments	* Health
		* Location Service
		* Magazine Subscription
		* Multimedia
		* mPayment
		* Music
		* TV

---

\* All company trademarks are the property of their respective owners.

**Step 4 - Use NewsPatterns.com to collect relevant information for each folder created above** by using pattern recognition to analyze global news articles, social media sites, etc.

At this stage of the news patterning process, news is collected into each of the industry topic folders. The sources of this news can be almost any digital source. RSS feeds, Google Alerts, Twitter, dedicated news sources, blogs and even YouTube are common sources that provide enough news content information to define the receiving folder. Over time, the flow of news through a folder will define the meaning of the folder. This meaning is the accumulation of news titles, source names, description text, article keyword descriptions and importance of the sources into the respective folders. With word analysis algorithms, the meaning of each folder is compared with the meaning of every other folder, in a process that seeks to discover similarities or dissimilarities of each folder with every other folder. Folders that share important words or phrases of sufficient volume create a similarity value between themselves. Folders that do not share important words or phrases generate a corresponding dissimilarity value between themselves. In a set of ten folders, the number of pair-wise similarity-dissimilarity values is 45. Likewise in folder sets that have twenty and thirty respective folders the pair wise comparisons are 190 and 435 based on the pair-wise combinations formula of  $n!/(2*(n-2)!)$  where  $n$  is the number of compared folder topics. As the number of folder comparisons grows, the number of pair-wise similarity-dissimilarity values grows exponentially beyond the time and ability of any human attempting to discover important relationships or trends.

These processes of similarity and dissimilarity discovery are conducted continually between each folder and every other folder. The processes need to be continuous because new news articles are constantly flowing into and out of the folders as new news content is created and added to the folder definitions. Articles are likewise flowing out of the folders because folder definition is defined by set time periods of weeks or months. The end result of these news flows and comparison calculations creates what McKinsey & Company has recently described as “Big Data.”[9] The news patterning process is indeed a big data process, when one considers thousands of potential new articles each day, with exponential combinations of news folder comparisons whose values change with the different flows of news articles – minute by minute throughout the day.

Yet the calculation of similarity-dissimilarity values is only half of the patterning process. With these pair-wise values, News Patterns calculates a best fit of these folder topics among each other and then plots them in a visual radar space. The nature of this best fit is designed to discover these basic patterns:

- The news folders that share the greatest general similarities among the other folders are drawn to the center of a conceptual folder space.
- The news folders that share the greatest general dissimilarities among the folders are pushed to the periphery of a conceptual folder space.
- Folders that share limited similarities are drawn to each other.
- Folders that share limited dissimilarities repel each other

Now the patterning process introduces the element of time. Because folder compositions change over time, the calculations of positions of the folders among each other within the visual radar space also change. This changing of relative locations provides a rich environment for pattern discovery. News folder movements may signify these interesting news patterns and their corresponding competitive market correlations:

- Folders that move from the periphery to the center of the visual radar space could indicate the emergence of a new competitor or substitute.
- Folders that move from the center to the periphery could indicate the loss of competitive market power for a competitive force.

- Folders that move to each other could indicate new business partners, new ecosystems, or new competitor – customer relationships.

Therefore, by big data calculations of many folders and many more weekly news articles, a continuous news patterning process can inform a strategic decision maker of new trends that were not considered in the original strategic plan or trends that are verified and tracked based on patterns in the news.

**Step 5 – Update Strategic Plans, Folders, and Language - as necessary.** Strategic planning is seldom accomplished with a sudden stroke of genius. Rather, it is important to keep an ongoing pulse of a competitive environment, as communicated by news folders, and the patterns that highlight them on a daily basis. Changes in industry structure are marked by new competitors, customers, vendors and substitutes that were not anticipated at the genesis of the strategic plan.

News Patterns has the capability to discover these new competitive forces that need dedicated folders. The way this is accomplished is to periodically analyze the sum of all articles in a collection of folders. For example, to analyze all topic folders relevant to one industry (line of business).

News Patterns discovers if a new folder should be added to the collection based on the fact that identifiable collections of articles are consistently related to each other, but not related to existing folders. The News Pattern process requires some non-automated supervision at this point, requiring a human analyst to agree to the added competitive force folder. Machine algorithms are smart and getting smarter all the time, yet no algorithm can catch every potentially meaningless folder suggestion. For example, for our tablet device example, it would be very difficult for patterning algorithms to disregard a rash of articles like this fictitious example: *“President Signs Voter Tablets at Rally.”* This example would indeed be related to tablet device manufacturing, yet there would be no ongoing relevance in creating a dedicated application folder for presidential politics.

Competitive environments are also marked by name and language changes. It is not uncommon for a manufacturer to create portfolios of similar products, many with different brand names. In most instances, it is sufficient to bundle the common names into one folder per competitor, unless there is a game changing characteristic in one of the manufactured products.

Language changes occur within any collection of industry folders. For example, “global warming” is now often referred to as “climate change.” The 3G wireless standard of EV-DO was once referred to as HDR. And Cingular was acquired by AT&T and is now referred to as AT&T. It is therefore important that folder definitions keep up with language changes to prevent the obsolescence of the news content flowing through them, as controlled by defining keywords.

Companies and their business units can analyze the strategically relevant information captured above on an ongoing basis to make better decisions based on superior situational awareness. The ongoing process of updating strategic plans, coupled with adding and deleting news folders and changing keywords when necessary, represents the first steps in the new era of using real-time news patterns to improve making strategic decisions.

## ***Conclusions***

Business executives know that discovering, learning and leveraging global information is vital for making good strategic decisions. By proactively accessing, analyzing, and structuring global information so that it is strategically relevant for making decisions, companies have a better chance of beating the competition.

To reach the stated objective above, a company should, at a minimum, clearly identify its lines of business at the (five forces) industry level and, on an ongoing basis, complement its structured industry knowledge with unstructured global news and social media content using advanced pattern-recognition solutions.

The sooner you know what the true industry scenario (future industry structure) will look like - the better (and much easier) it will be to refine your strategy and complementary tactics. Internally-focused dashboards are fine for looking at your company and business units; real time corporate planning management solutions represent the next frontier in executive management tools because they focus on the external global environment providing the strategically relevant intelligence necessary for making better decisions.

To best understand your holistic competitive environment, it's best to leverage global intelligence and pattern recognition solutions aligned with your corporate planning framework to reduce uncertainties for making better decisions.

## ***References***

1. Michael E. Porter, "Competitive Strategy: Techniques for Analyzing Industries and Competitors" 1980. Also, see: Porter's, HBR article, 'The Five Competitive Forces That Shape Strategy' 2008.
2. See <http://RevereData.com> and <http://IndustryBuildingBlocks.com>
3. See <http://www.census.gov/naics>
4. Michael E. Porter, "Competitive Advantage: Creating and Sustaining Superior Performance" 1985.
5. Ibid., Chapter 13 "Industry Scenarios and Competitive Strategy under Uncertainty".
6. The solution described in this article is, to the best of our knowledge, the first of its kind.
7. Estimate by News Patterns <http://www.NewsPatterns.com>.
8. Friedrich von Hayek, "The Road to Serfdom" 1943.
9. McKinsey & Company, "Big data: The next frontier for innovation competition and productivity" May 2011.

## ***About James J. Andrus & Alan S. Michaels***

James J. Andrus is President of Netro City Design & Information Systems Inc. (News Patterns) at <http://www.NewsPatterns.com> which discovers trends in the news, where news is broadly defined to include blogs, Google Alerts, social media, and YouTube videos. The collective or swarm intelligence of thousands of news content creators are used as inputs to powerful pattern discovering algorithms that highlight important trends and the articles that drive them. The end value of News Pattern processes are a real-time situational awareness and a superior anticipation of future trends.

Alan S. Michaels leads the global market research at <http://IndustryBuildingBlocks.com> - a website which provides industry information, along the lines of a Michael E. Porter five forces industry analysis, for the top 12,000 global industries. The industry template for each industry covers: industry revenue; industry growth rates; industry attractiveness score; competitors (at the corporate parent level as well as the brand level); product varieties; substitutes; complements; customer types; channel segments; industry, economic, technology, and geopolitical trends; industry uncertainties; industry success factors; buyer decision makers; buyer purchase criteria; cross-references to NAICS, SIC, and UN-based ISIC codes; and more. He also manages the popular LinkedIn group, "Corporate Planning & Global Industry Segmentation" which discusses these solutions and a lot more at: <http://www.linkedin.com/groups?about=&gid=1846141>.