# BUSINESS COMPETITIVE INTELLIGENCE –THE ULTIMATE USE OF INFORMATION TECHNOLOGIES IN STRATEGIC MANAGEMENT

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The access to an increasing world of information and the deployment of cutting edge information technologies empowers the modern corporation to understand itself and its markets more completely than ever before backing with real data any of the strategic analysis methods. Benchmarks, market segmentation, opportunities and threats, strengths and weakness are more accurated and the strategies subsequently founded are more likely to succeed.

Among public data sources available on Internet one can mention Financial reports of companies, Trade Registry, National Institute for Statistic, industry organizations publications, Chamber of Trade and Industry, other governmental or nongovernmental institutions, Mass-Media at large. The paper presents the design of a datawarehouse intended to store public information on companies collected from various sources. The exploiting possibilities vary from market segmentation and benchmarking to estimated value chains and trophic chains. The paper is an attempt to apply business intelligence technologies to economic environment analysis making use of romanian public data sources.

## Introduction

Competitive intelligence has undergone a raising interest in recent years as a result of the information explosion and the sharpness of information technologies. Trying to define the scope of competitive intelligence, a lot of definitions proposed by business intelligence professionals and strategic analysts were summed up in the Competitive Intelligence Handbook [4]. The general opinion of all these business information professionals is that Competitive Intelligence deals with the collection, selection and interpretation of publicly-held information that emphasise competitors position, performance, capabilities and intentions.

Competitive intelligence is the analytical process that transforms scatered information about competitors and customers into relevant, accurate and usable strategic knowledge on market evolution, business opportunities and threats

Business intelligence is the activity of monitoring mostly the history of the company activity for information that is relevant for the decision-making process. Current information about the environment is needed in the analysis process to make referrence to as industry benchmarks or just as direct competitors performance levels to compare against.

Competitive intelligence is focused on environment and uses public sources to locate and develop information on competition and competitors, information later used as references, benchmarks or any other basis for strategic analysis. Competitive Intelligence is the natural exploit of the increasing availability of commercial databases world-wide, the on-line mass-media and the development of cutting edge information technologies: business intelligence and knowledge management.

**The company environment**

By its very nature, no business is isolated. In doing its activity, the business will need to deal with customers, suppliers, employees, and others. In almost all cases there will also be other organizations offering similar products to similar customers and seeking similar objectives: growth, profit and fame. These other organizations are known as competitors.
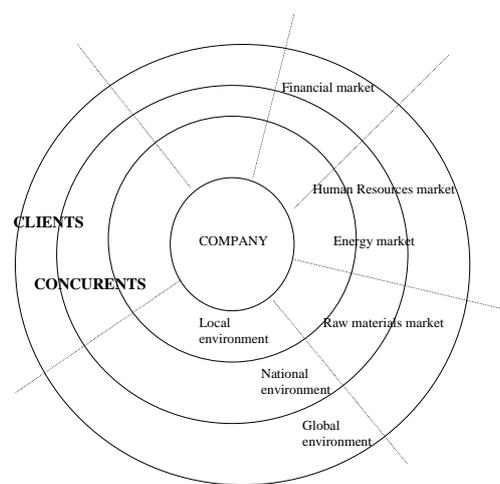


Fig. 1 The company environment

The company environment could be seen divided into input market and output market. The input market provides the company with materials, energy, human resources, finances, capital and any other resource used in business process – including ""intangibles" resources like economic, natural, social, political, and technical environment. The output market is in demand of products/services offered by the company. The environment could be divided also in local, national and global according to its degree of vicinity against the company.

Competitiveness is a natural relationship between businesses. Business competitors are other organizations offering the same product or service in the present time but also in the future and also organizations that could remove the need for a product or service by offering subtitutes or changing habits.

Monitoring competitors worth a lot because it provides necessary knowledge to be able to predict their next moves, exploit their weaknesses and undermine their strengths.

According to Arthur Weiss, founder managing partner of AWARE company which has an international reputation within the Society of Competitive Intelligence Professionals (SCIP), there are four stages in monitoring competitors - the four "C"s:

Collecting the information
Converting information into intelligence
Communicating the intelligence.
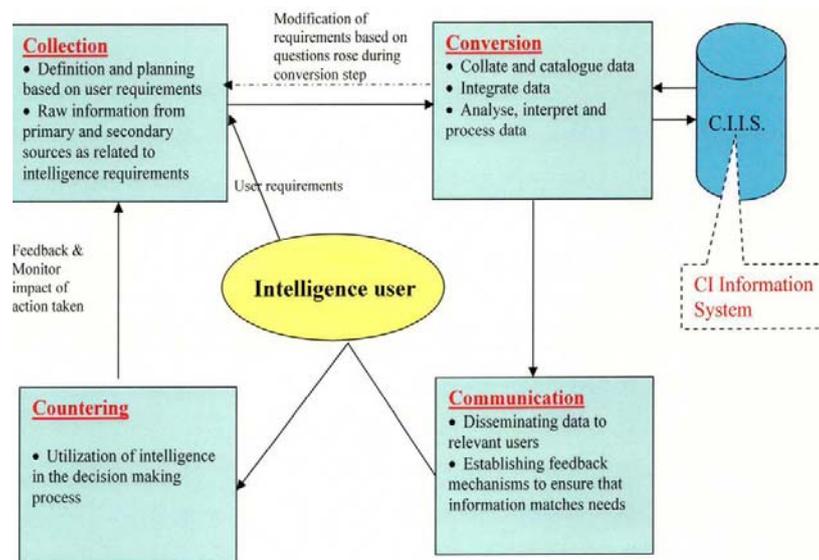Countering any adverse competitor actions - i.e. making use of gathered intelligence.



Fig.2 – The 4C- approach of competitive intelligence
A.Weiss  Business Information Review 19(2) – 2002 [5]

This approach is war-like , with terminology  taken  from the military field (intelligence, counterintelligence and  techniques as well. All  businesses are fighting to gain the same resource and occupy the same territory: the market. And like in war, it is necessary to understand the enemy: his vision, his strengths, where he is vulnerable; where he can be attacked; where the risk of attack is too great and so on. The war-like  approach of the business relationship with the competitors led to a new branch of IT applications designated to support competitive intelligence - CI information systems.

### Collecting competitor information

Preliminary decision on what business environmental information must focus on is made roughly on business strategic plans ranging from planning a new product, developping a new business line to follow the industry trend or making use of an entirely new technology  up to  looking at a potential merger, acquisition or business partnership.  The information requirements for diferrent  business decisions will be completely different and so the information that should be seeked will also be different. There is no value in information that cannot be used to inform the business's strategic or tactical decisions and the time, money, and effort spent collecting it is wasted.

At this stage the objective is to identify the key areas of concern for the business decision makers and the requested information. Thus, rather than collecting information at random, the search needs to be focused and planned, and aimed at answering the various intelligence requirements of the business – often termed key intelligence topics.

Information will come from a variety of sources, both within the organization and external to it. Information sources are classified primary and secondary:. Primary research is often done through a telephone interview, such as contacting suppliers, customers, analysts, and government agencies.

Secondary sources usually offer general data and information. . Secondary sources are the easiest to access because they are public. . Primary sources offer the most relevant information, but they are very hard to access Primary sources can represent a means of completing the data and information which were not obtained from the secondary sources
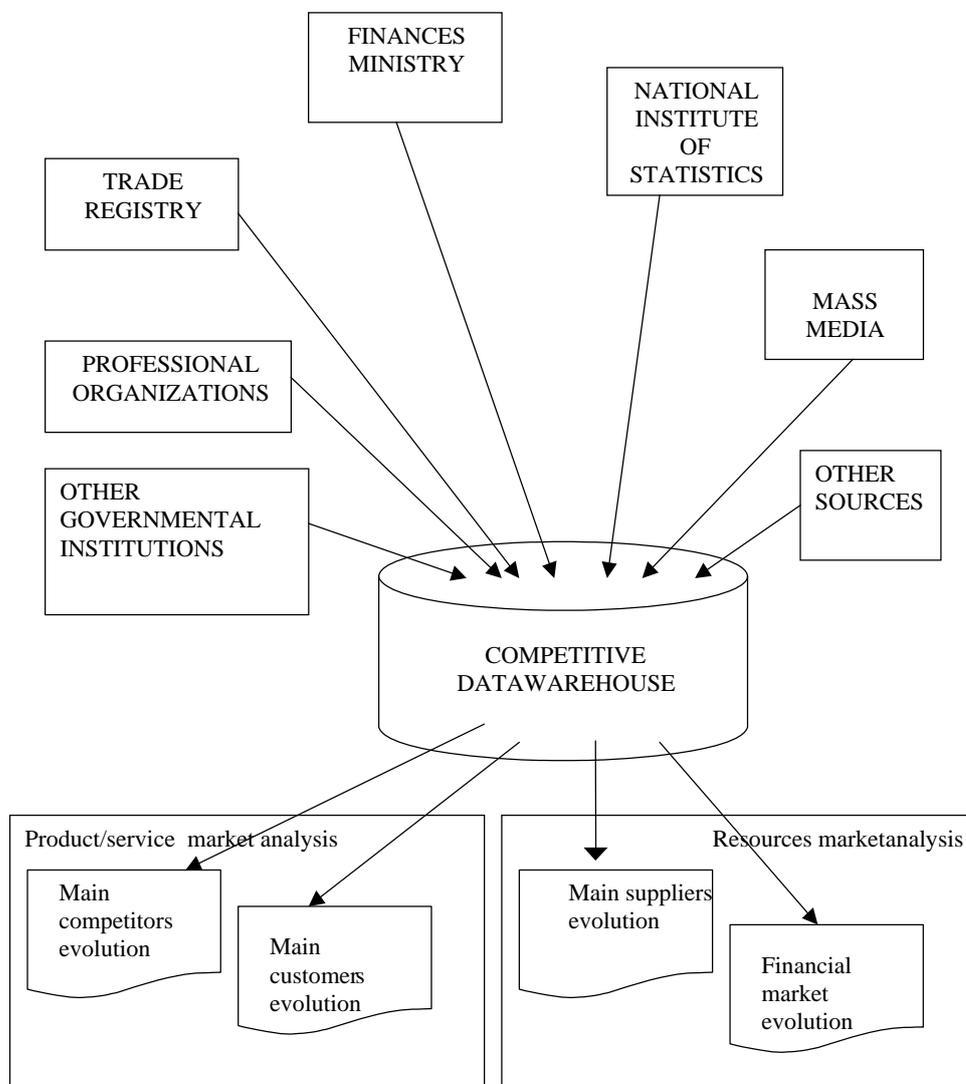


Fig.3. Competitive Datawarehouse – Inputs&Outputs

In the Internet era there are a lot of  public electronic primary information sources most companies are advertising their services, there are numerous other web-sources - discussion forums, web-logs, customer and governmental sites and so on. One can also find information at trade shows and conferences, and by interviewing industry experts, your competitors' customers and suppliers, ex-competitor employees - or even the competitor although there are ethical issues involved when obtaining information from some of these sources.

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 ┌─────────────────┐              ┌─────────────────┐
 │    INTERNAL     │              │    EXTERNAL     │
 │   ENVIRONMENT   │              │   ENVIRONMENT   │
 │    ┌─────────────┐            │    ┌─────────────┐
 │    │  BUSINESS   │            │    │ COMPETITIVE │
 └────│ INTELLIGENCE │           └────│ INTELLIGENCE │
      │             │                 │             │
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 │     STRENGTH     ││   OPPORTUNITIES  │
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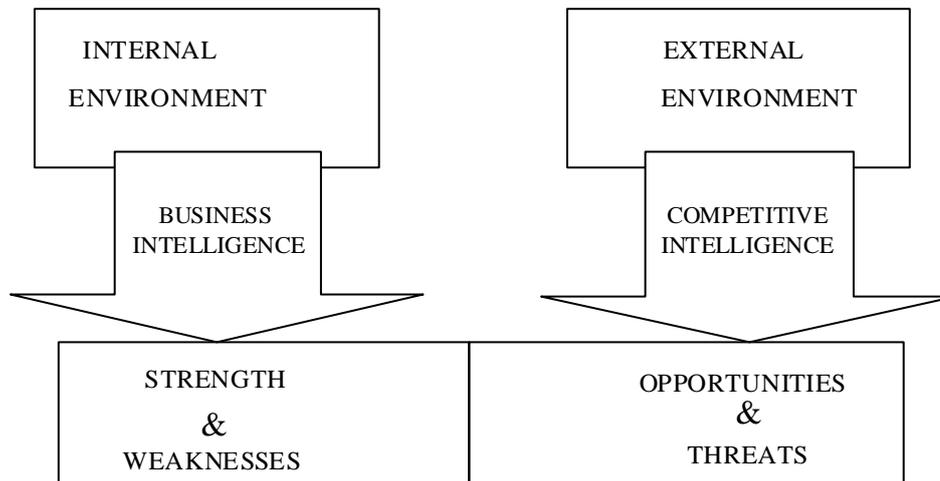
Figure 4. Business and competitive intelligence

Business intelligence  is scanning internal environment for  summary  information that is relevant for the decision-making. Current information about the environment is needed in the analysis process to make referrence to as industry benchmarks or just as direct competitors performance levels to compare against. This reference information is provided by competitive intelligence which monitors the company environment.

The cross-analysis of  information provided by both technologies may be syntetised in a SWOT matrix, BCG matrix  or any other basis for strategic analysis. Michel Porter's approach in analysing industry and competitors largely known as Five's Forces Model is entirely based on such cross information with great added value. The strategic business managers seeking to develop an edge over rival firms often use this model to better understand the industry context in which the firm operates.

Business Information Technologies are seen as cutting edge Information Technologies made on purpose to support business information engineering . As exposed in the  paper  "Business Information Engineering " - International Conference on Accounting  and Management Information Systems (AMIS) –vol.2 , Bucharest-2007 [1] , management methods, techniques and support tools could  be seamless integrated with Business and Competitive Intelligence.

**Converting information into intelligence**

Unfortunately much of collected data will be redundant, out of date, inaccurate or incomplete, even wrong.. Like a puzzle, each piece can help build up the compete picture even if some pieces are missing or damaged,  one can often get a good idea of what the real picture actually is.

According to 4CI model, there is a long way from information to intelligence . Converting information into intelligence is a process consisting of three substages:

-Collate and catalogue information

-Integrate it with other pieces of information

-Analyse and interpret it

All information needs to be collated - with highlighted links to any reference. The information will need to be indexed and catalogued in order to accommodate new information coming along. It may be stored in a custom-built or dedicated competitor database accessible via the company Intranet - although it can also be stored in much less sophisticated forms.

Finally, the relevance and importance of each piece of information needs to be interpreted and analysed - on its own and in conjunction with other information, making use eventually of advanced information technologies like data mining and knowledge databases.

This is where information starts to become intelligence and can lead to an idea of competitor strategy and industry future trends.

## Communicating the intelligence

Competitor intelligence needs to be evaluated and selectively communicated to all who need to make decisions based on what customers, suppliers, or other companies in the market are doing or are likely to do.

Even if this stage seems well understood and well supported by communication technologies, a new cutting edge technology was developed in order to fully achieve this goal – Knowledge Management.

## Strategic analysis of gathered information

The core of competitive intelligence (CI) is analysis. CI Professionals must be experts in the use of various analytical models, such as SWOT Analysis, Porter's Five Forces, PEST, Market Segmentation and special analytical models such as Psychological Profiling, Shadowing, Reverse Engineering. When applied correctly, these analytical models can convert disparate pieces of information into actionable intelligence.

CI uses different methods and types of analysis to transform the obtained information into acting intelligence. A research study made by SCIP (Society of Competitive Intelligence Professionals) in 2006 shows the most frequently used analysis methods: Competitor Analysis (known as Competitive Analysis), SWOT analysis and Industry Analysis based on Porter's Five Forces Model.

SWOT Analysis (Strategic Analytical Techniques) is used as a base for formulation the objectives, strategies and their implementation. It must be used after using other techniques of analyzing the external environment of the company from which the opportunities and threats are understood, and after using some techniques of internal environment analysis from which the strengths and weaknesses are detected.

The analysis process is finished by making some intelligence products which take the shape of some documents and activities as: company profiles (the most used to the SCIP study above mentioned), competitive benchmarking, market or industry analysis, early warning alerts, customer or supplier profiles, technology assessments,

daily reports, strategic impact analysis, risk and opportunities bulletin, daily CI bulletin etc. As illustrated in the CI process scheme developed by Arthur Weiss, it is noticeable that the collection and conversion (analysis) stages are not successive, but they happen almost simultaneously, because during the conversion stage, some new collecting needs can occur as consequence of the appearance of some barriers which block the obtaining of desired results.


**Integrating Business Competitive Intelligence in strategic management process**

The last phase of CI process refers to the use of intelligence in the decision making process and is focused on evaluation of decisions' impact over the competitive position and performances in the own company. The CI process can restart to collect new information as a consequence of new demand of intelligence. In the CI process, there is a continuous interaction between producers and end-users of intelligence, both in the beginning phase to clarify the demands as well as in the feedback phase to establish the quality and utility for the resulted products.
This last phase will assure the informational and decisional superiority with results in obtaining competitive advantages.
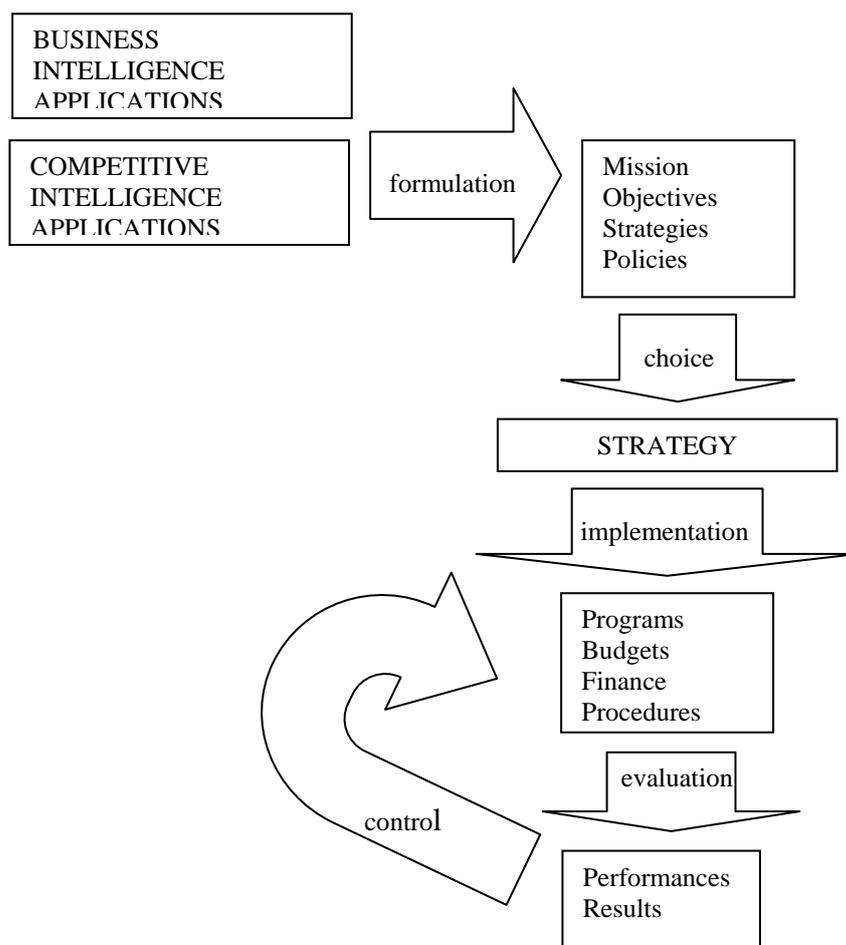


Figure 5 Business&Competitive intelligence Integration

## Competitive Intelligence application

The competitive Intelligence application is based on a central datawarehouse build mainly on Financial statements of enterprises publised by the Finances ministry. The financial data are collected for companies along 5 years and completed with CAEN code of the main activity  and Product code associated with CAEN clasification taken from the PRODROM master file. There are also added data on  company location and other data provided  by a specialized company Listafirme that exploit data from Trade Register and some data from financial statements
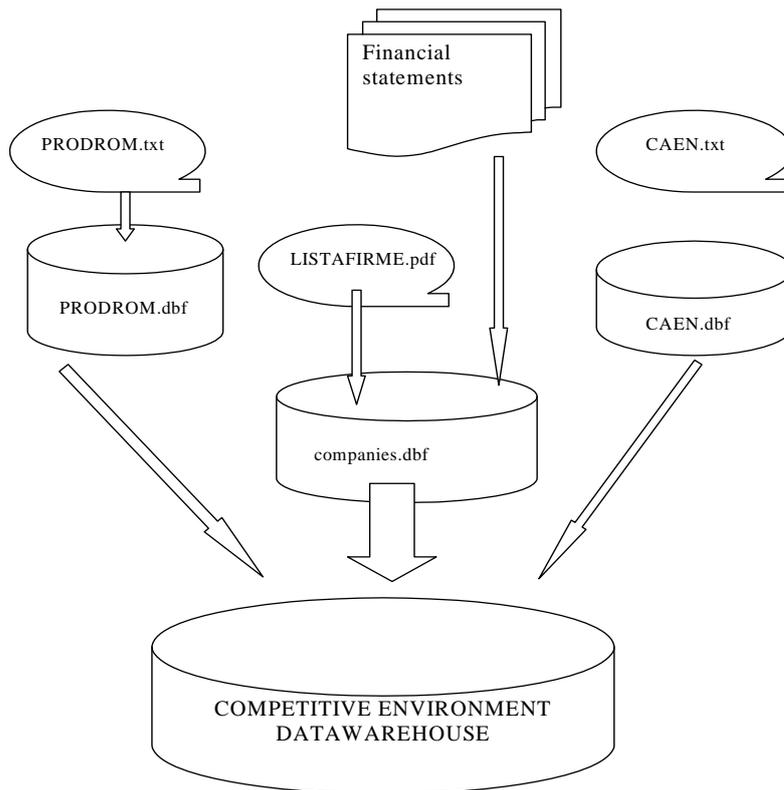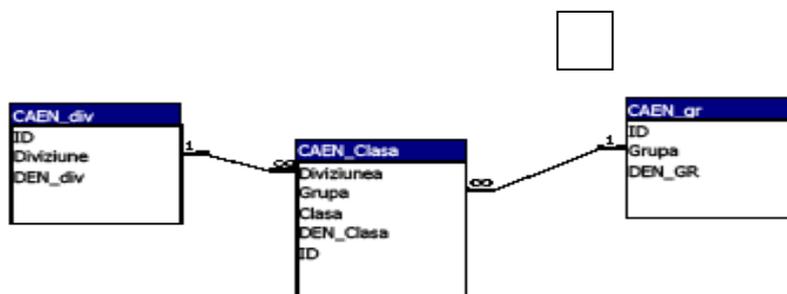
Fig 6. . Competitive environment datawarehouse

Fig.7 CAEN database
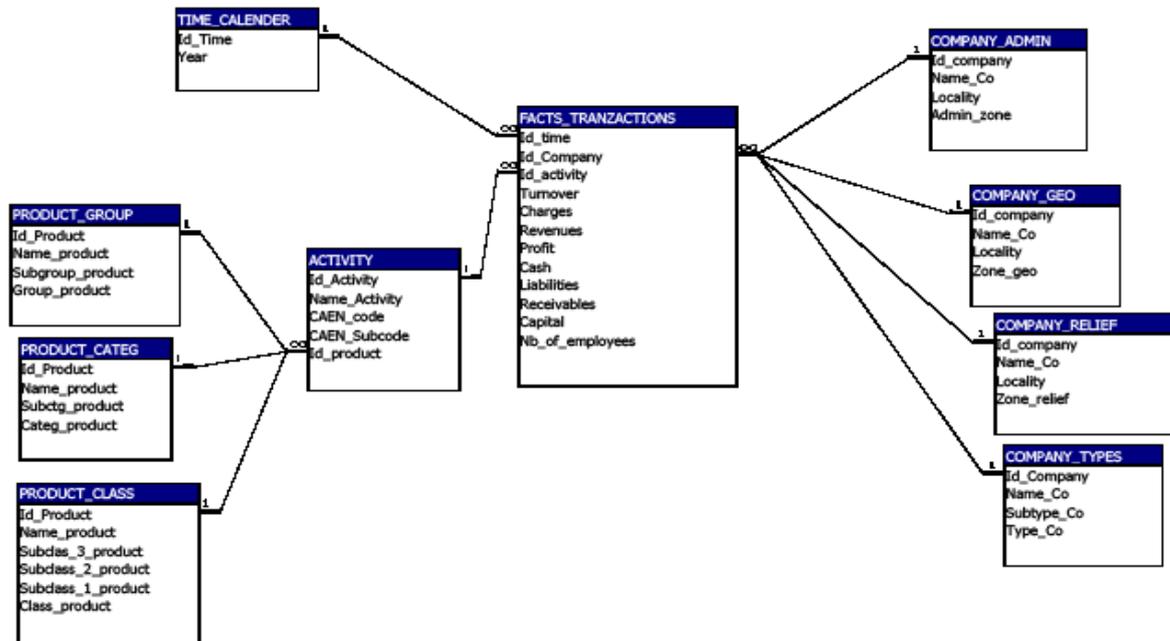
Fig 8. Prodrom database



Fig. 9 Competitive intelligence application data warehouse

Even if classification informations on many companies regarding activitiy object and delivered products are not always accurate, many cross analysis could give some insigts on romanian economy. Future developments aims to insert statistical references provided by National Institute of Statistics and could be expanded to accomodte data from other countries economies. The utmost use of such competitive intelligence application could be done if implemented inside a governmental organisation like Finances Ministry.

**Cognitive support**

There are many books on the subject - covering everything from finding information on competitors, to analysing the information and finally using it in business strategy. for example the classic texts on strategy by Michael Porter - Competitive Strategy and Competitive Advantage. There are also a lot of CI companies offering research and analysis services, as well as training and CI workshops so that Business Competitive Intelligence become a affordable technology even for medium and amall business.

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