# The use of inter-organizational information systems for business intelligence in extended enterprise: case of Power BI in the condor supply chain management

**BARBECHE Samir [*], KARICHE saliha [**]**

**Received: 14/12/2020**
**Accepted: 24/03/2021**
**Published: 27/04/2021**

**Abstract:**

*The aim of this study is to understand the role of IOIS coordination and collaboration of the intra- and inter-enterprise relationships in the SCM of the extended enterprise, in order to have the necessary information to provide the dashboards in a Business intelligence system. Given the exploratory nature of the research, we have chosen to use a qualitative methodology by with the case study as a research tool, we have tried to apply this practice within the Condor Company as an Algerian extended enterprise that has been experimenting with business intelligence for more than a year in its business processes. The results indicate that the IOIS systems enhance supply chain collaboration intra- and inter-enterprise relationships in different levels. Particularly, the visualization of the performance measures through computerized dashboards in a shared business intelligence system like POWER BI enhances the quality of joint decision-making and the reporting process by providing (KPIs) supporting and executing performance measurement activities at the operational level and also by aligning managers' performance measures with the strategic direction of the organization at the strategic level.*

**Keywords**: *Inter-organizational information system (IOIS), Coordination and collaboration, Power BI, Extended enterprise, SCM.*
**JEL Classification**: L86, M15, M16, L24, L23, M11.

## استعمال نظم المعلومات بين المنظمات في اطار ذكاء الاعمال في المؤسسة الممتدة

## دراسة حالة Power BI في قيادة سلسلة توريد مؤسسة Condor

**ملخص** :

تهدف هذه الدراسة إلى معرفة دور أنظمة المعلومات ما بين المنظمات، في تحقيق التنسيق و التعاون بين مختلف الفاعلين الداخليين و الخارجيين لسلسلة التوريد في المؤسسة الممتدة، بالتركيز على توفير المعلومات الأساسية لتغذية لوحات القيادة المستخدمة في إطار تطبيق أنظمة ذكاء الأعمال .نظرا للطبيعة الاستكشافية للبحث، فقد اخترنا استخدام المقاربة الكيفية من خلال دراسة الحالة كأداة بحث، و لقد وقع اختيارنا على مؤسسة Condor كمثال لمؤسسة ممتدة جزائرية تستخدم أنظمة ذكاء الأعمال لأكثر من سنة. بينت النتائج التي توصلنا إليها أن أنظمة المعلومات ما بين المنظمات تعزز التعاون داخل سلسلة التوريد والعلاقات بين مختلف الفاعلين داخليا و خارجيا على مستويات مختلفة. على وجه الخصوص، فإن تصور معايير الأداء من خلال لوحات القيادة الالكترونية في أنظمة ذكاء الأعمال التشاركية مثل Power BI يعزز جودة صنع القرار المشترك وعملية إعداد التقارير من خلال توفير مؤشرات أداء دعم وتنفيذ

[*] PhD Student (E-business), laboratory (management de changement dans l'entreprise algerienne), University of Algiers 3, Algeria, barbeche.samir@univ-alger3.dz ..... (Coresponding author)
[**] Professor, University of Algiers 3, Algeria, Kariche_saliha@yahoo.fr

*أنشطة قياس الأداء على المستوى التشغيلي، أما على المستوى الاستراتيجي يتحقق ذلك من خلال توافق مقاييس أداء المديرين مع الاتجاه الاستراتيجي للمؤسسة.*

**الكلمات المفتاحية** : *نظام المعلومات بين المنظمات، التنسيق و التعاون، Power BI، المؤسسة الممتدة، ادارة سلسة التوريد.*

**تصنيف JEL** : L86، M15، M16، L24، L23، M11 .

## 1.Introduction :

At the turn of the millennium, the growing use of the Internet has affected how organizations conduct their business and has led to a progressive migration to open standards, and more flexible information technologies(IT)enabled organizations to accomplish business processes differently, with other partners either in cooperation or collaboration through the integration of information systems and the use of collaborative technologies (Karuhanga, 2016) (Korbi, 2019).

So a new business management paradigm emerged: the extended enterprise witch correspond to the extension of the network paradigm in Information System(IS) with a real migration from centralized systems to decentralized or distributed systems, generally recognized as inter -organizational information systems (IOIS) for supporting cooperative, intra- and inter- organizational, functional teams. (Tran, 2014) (Konsynski, 1993).

(IOIS) are generally, used to integrate firm's operation internally and externally by supporting process integration between two or more organizations, facilitate collaboration and manage potential conflict. Many studies (Zhang & Cao, 2018) (Agbenyo et al., 2018) (Rajaguru & Matanda, 2013) (Wang and Wei ,2007), confirmed that and viewed IOIS as information systems resources that can contribute to create higher level capabilities for firms. (Asamoah, Agyei-Owusu, Andoh-Baidoo et Ayaburi, 2020).

The use of IT for inter-organizational processes or IOIS leads to benefits on several levels: improved communication with partners and decreases coordination costs by lowering the costs of communication, reduced inventory levels, increased productivity, improved customer services, quicker response to environment changes and market trends by enabling more efficient matching of demand and supply in the marketplace...., (Karuhanga, 2016)thus enabling the expansion of a firm's business scope and the reengineering of inter-organizational business processes (Robey, Im et Wareham, 2008)

Furthermore, IOIS appropriation (adoption and use) support supply chain(SCM) management with suppliers and distributors, It provide pooled information resources such as common databases, communication networks, and common applications, they also allow partners in a SCM network to collaborate, because through collaboration ,products and services could be delivered to those who need them in an easy, faster, efficient and effective manner (Villamarín Garcia, 2020) and partners could make right decisionsby exchanging both structured data and unstructured data through business intelligence(BI).

BI improves reliability, scalability, security and especially coordination and collaboration in real-time andcreates digital dashboards that enables intelligent joint decisions making. (Asamoah et al., 2020).

Based on the above, we believe that the question of how BI tools are used in an extended company especially on SCM network is of great importance. So we need to have answers about the following questions:

- **What are the proper characteristics of the BI dashboard?**
- **And how can it enhance the quality of decision-making and the reporting process?**

Therefore, the purpose of this article is to examine the role of business intelligence in order to understand how they support decision making process. Also, as a secondary objective, the paper examines the characteristics of inter-organizational information system in an extended company and describes its different aspects by listing the main factors for adopting these systems, the technology supports, benefits .....

In the first part, we will determine what are the specific characteristics and the status of IOIS with particular regard to business intelligence tools dimensions of control, coordination and management in extended company.
In the second part, we will present our methodology based on a case study of Condor Company which operates as an extended enterprise.
In the last part, we analyze and discuss the specific characteristics of "Power BI" as new tool of business intelligence in Condor Company.

## 1. Theoretical foundation:

Before discussing our research questions listing above ,we consider it is well-situated to present the theoretical basis of an IOIS in order to understand the motivations and consequences of their use within the SCM network and BI.

### - Why and how becoming an extended enterprise?

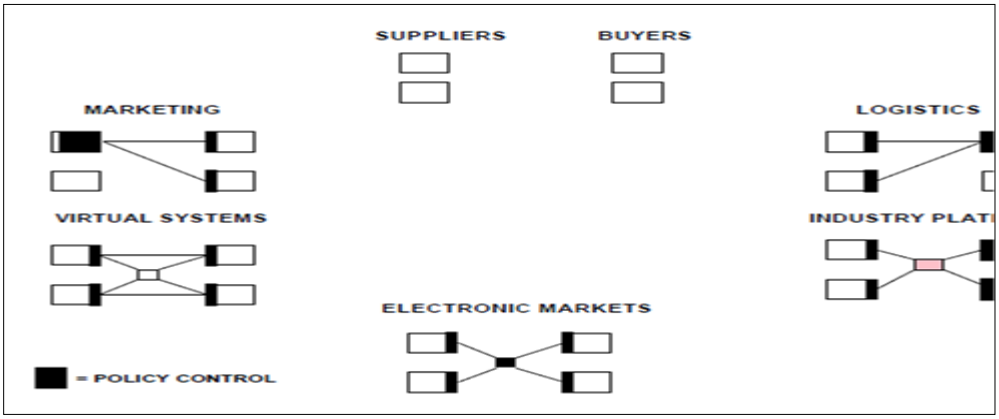
The academic discourse on use of information system for inter-organizational business management emerged within the management IS research in the early 1980s, even it had already been conceived in the 1960 (Karuhanga, 2016). This discourse appeared under the rubric of IOIS and in relationship with the emergence of "extended enterprise" which is characterized by (Kyung Hye et Joël, 1997)(Browne, 1995) (Tran, 2012):

- Focusing on core business, outsourcing other activities to suppliers, and service providers, which enhances competitive capabilities and mutual dependencies;
- Change communication patterns and abilities;
- Long-term relationships are formed with key customers, who are treated as equal partners;
- Methods, business processes, and technologies are used to support business activities/processes that cross-traditional enterprise boundaries – in particular, to support customer-supplier integration.

The main characteristic of an Extended Enterprise is to coordinate its internal systems (intra-organizational activities) with other systems in the supply chain and further must be flexible and prepared for adapting to change. Thus, IOIS appears as the adequate system to achieve these goals (Kyung Hye et Joël, 1997).

Academic and professional work underlines that IOIS are a very large organizational phenomena due to their complex nature. Barrett and Konsynski, was one of the earliest attempts to define IOIS as: "a general term referring to systems that involve resources shared between two or more organizations". Some years later Konsynski, then with Cash, amended this definition to: "automated information systems shared by two or more companies". Barrett also later arrived at a new definition: " sharing data communication/processing systems that link independent organizations (Suomi, 1992).

In this article we potentially defined IOIS as automated information systems where data are digitally transmit and shared between two or more separate organizations and designed to link business processes in order to facilitate the creation, storage, transformation and transmission of information in real time and to collaborate more effectively (Karuhanga, 2016) (Robey, Im et Wareham, 2008) (Asamoah et al., 2020). IOIS involve Internet-based EDI, supply chain management systems, SRM, CRM, e-procurement systems, open- standard managing customer-supplier relationships, collaborative planning, forecasting and replenishment (CPFR), efficient consumer response (ECR), vendor managed inventory (VMI), Web-based procurement systems, electronic trading systems, radio frequency identification (RFID), customer relationship management (CRM), supply chain management systems, enterprise resource planning (ERP), Internet/Intranet/Extranet, portals, e-hubs, workflow automation), and collaborative creativity (Krien, N; Michel-Guillou, 2013). Fig1 shows the different functions and areas where we can found IOIS:




source: (Konsynski, 1993)

**Figure (1) :** IOIS in a company

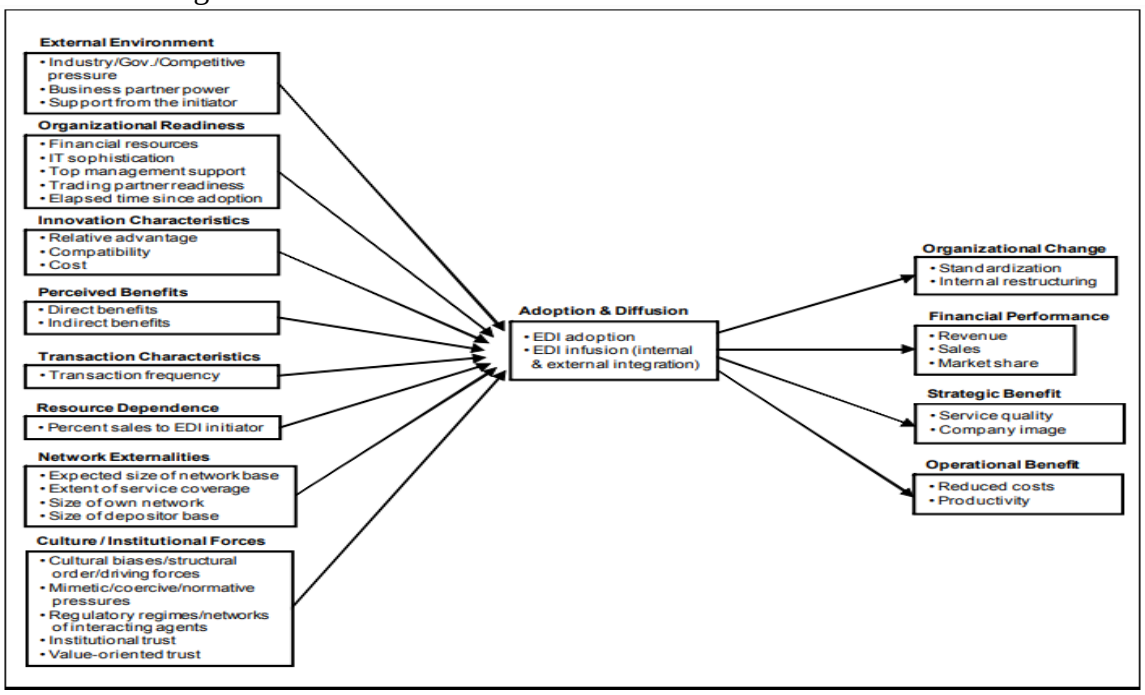
According to this fig we can see that IOIS cover all the functions by synchronization of all activities in the network.

The main target is then, to create value for the customer and for all partners in the logistic chain. This supposes at first a complete integration of the actors of the chain and cooperation (strategies of partnerships), then a sharing of risks and benefits is necessary for the commitment of the members of the chain and their long-term cooperation (FulconisFrançois, Meurier Béatrice, 2019).

- **Why a company adopts and uses IOIS? What are the benefits and the consequences?**

Our research on this field allowed us to notice that the literature on IOIS is dominated by discussion around three areas reviewed by Robey et al. (2008): adoption of IOIS, its organizational consequences and its impact on governing economic transactions. Adoption research aims to explain adoption through a broad range of factors, Rogers' (2003) classical theory of diffusion of innovations and related theories of technology acceptance and adoption constitute the dominant paradigm in IOS's Studies adoption (Asamoah et al., 2020). Teo's et al. (2003)research work falls in the same line of interest, with using neo-institutional theory to derive factors for predicting IOIS adoption (Korbi, 2019). Robey and al group all these factors and results' studies into clusters such as external environment and organizational characteristics, external pressure, organizational readiness and perceived

benefits. Studies on organizational consequences focus on implementation process results with a great attention to the benefits of integration; this one reduces losses from unnecessary work related to resolving information quality and compatibility between data sources (Zhang et Cao, 2018) by having a common interface for several applications which offers easier appropriation and use by end users. In addition, data integration provides a solid foundation for process optimization and decision making. (Rowe and Eska, 2012) (Wang and Wei, 2007) (Karuhanga, 2016) (Dwivedi, Wade et Schneberger, 2012). Fig 2 summarizes all arguments and comments listed above:




source: (Robey et al., 2008)

**Figure (2) :** IOIS in a company: why? Consequences and impacts.

Today, some companies are seeking to go further in the integration, either by the use of more recent applications such as SCM and / or CRM modules integrated into the ERP, either by integrating the exchange of strategic information and strategic control within the use of shared BI dashboards (Rowe and Eska, 2012) (Mourey, 2018).

**- IOS for Business intelligence is it possible?**

Can IOIS technologies and applications be used in business intelligence (BI)? To formulate a response to this question, it is important to firstly give a definition of BI.

Ever since they first appeared in the mid-1950s, Business intelligence (BI) systems are commonly known "as a suite of technological solutions that facilitates organizations to amass, integrate and analyze vast stocks of data in order to understand their opportunities, strengths and weaknesses" (Božič et Dimovski, 2019). BI are information systems that supports decision processes by facilitating more aggregation, systematic integration and management of unstructured and structured data, dealing with a huge amount of data providing end-users with increased processing capabilities to discover new knowledge and offering analysis solutions, ad hoc queries, reporting and forecasting (Reinking, Arnold et Sutton, 2020). A BI system is also a combination of tools, such as a data warehouse, online analytical processing (OLAP) and dashboards.

Data in the data warehouse are integrated and modeled in multidimensional form in order to support multidimensional analysis (OLAP) in real time and enables users to apply operations such as aggregation, filtering, roll up and drill down, in this manner making decision will be better and faster and also common with different internal and external partners (Božič et Dimovski, 2019). The data warehouse gathers, accurate, cleans and detailed data from multiple sources by using ETL: particular tools to deal with heterogeneous data sources and transform data into to a specific format based on rules, functions and conditions and then integrated and consolidated and loaded into DW tables, whereas dashboard servers as the front-end application for data visualization and performance management. It enables users to create graphs, charts, widgets and ad hoc reports and decision makers to track the key performance indicators of the business (Ain, Vaia, DeLone et Waheed, 2019).

Could these technologies constitute inter-firm intelligence on an IOIS and enhance learning and knowledge data interchange?

Many studies (Krien, N; Michel-Guillou, 2013) (Reimers, Johnston et Klein, 2010) have suggested that IOIS could be extent and enables creation of inter-firm intelligence, by using shared technologies and applications such as shared data warehouse and data/text mining, shared repository database and decision support systems, shared digital documents and archives, shared knowledge acquisition, retrieval, and navigation, knowledge search, knowledge discovery and generation analytics , group decision support systems, software repository database and decision support systems.

**- Business intelligence as support for business decision:**

Managers need to apply and analyze specific, key performance indicators (KPIs) such as cost savings, information quality, resource utilization, flexibility, visibility, trust and innovativeness. At the operational level the BI system provides (KPIs) supporting and executing performance measurement activities. At the strategic level, managers use strategic performance measurement systems (SPMS) to align managers' performance measures with the strategic direction of the organization and improve overall performance.

One important component of the SPMS is the visualization of the performance measures through computerized dashboards that are commonly used as the primary information delivery mechanism for getting BI information to operational managers. Dashboards have made it possible for managers to receive management information that is customizable, highly accessible, and available in real-time. Dashboards are an integral part of how the information and analysis generated by BI systems are provided to decision makers. (Vajirakachorn et Chongwatpol, 2017). Dashboard is a human–computer interface which connects the decision maker and the integrated business and engineering simulation and optimization model to facilitate presentation of information to top-level decision maker.

One important capability of dashboard is to visualize current and historical KPIs, therefore the decision maker gets a clear vision to company's performance. In addition, the dashboard allows decision makers across various external and internal partners to coordinate and implement decisions. When there is a significant deviation of KPIs from their normal value, the decision maker can take actions by changing the decision variables through the sliders on dashboard. source (Geffroy, de Corbière, Deltour et Lairet, 2017). Other significant proprieties of the KPIs are their multi-nature, KPIs should be quantitative, qualitative, present, historical, formal, and informal, and in real-time. table1 summarizes these proprieties:

**Table (1) :** KPIs in a dashboard.

| Rationale for performance measurement | Selection of performance measures | Features of effective performance measurement |
|---|---|---|
| Measures to support the implementation of company strategy<br>Measures to give guidance for the future<br>Measures to encourage improving LT profits | Nonfinancial measures should also be used<br>Customer perspective should be measured<br>Flexibility in manufacturing should be measured<br>Innovation, quality, time, and inventories should be measured<br>Supply chain leadership should be measured | Measures should support each other and form an integrated entity<br>Measures should be clear and simple<br>Measures should encourage constant performance<br>Incentive systems should support measurement systems<br>Measures should fit the organizational culture<br>Measured elements should be objective<br>Measures should depend on the phase of the product's life cycle |

source: (Beske, 2012)

## 2. Research methodology and case study:

Given the exploratory nature of our research, we have chosen to use a qualitative methodology because it is more appropriate to our research questions. So we used the case study as a research tool because of its wide spread in management research, we have. This choice is in line with the work of (Deslaurier, 1991).

The case study appears as the appropriate method to explore a contemporary and a complex empirical phenomena, because it allows better and control of the results and facilitates their analysis (GAGNON, 2017) (Bell, 2010), and therefore appears to be the most suitable qualitative methodology for the analysis of complex and emerging processes in IS (Corbi et Larivi, 2014), the case study allows a detailed analysis of the actors, their characteristics and their interactions, which can constitute a point start to explore the dynamics of the organizational phenomenon studied like IOIS and BI in an extended company (Hlady Rispal, 2002)

We wanted a theoretical representativeness by choosing an extended company operating in Algeria, the Condor Company. The choice of the case study is a decisive step in the qualitative research process. For this we have ensured we have selected an extended company that has been experimenting with business intelligence for more than a year in their business processes. These choices were also a function of the quality of the materials collected and the different techniques which are mobilized: primary data were collected especially by using direct observations and several semi-structured interviews, because they are a method of interview in which the researcher leads the respondent to communicate numerous, detailed and quality information on the subjects related to the research (Corbi et Larivi, 2014), whereas the secondary data are collected in several supports (reports, screenshot, internal notes, data bases access).

Our empirical research focuses on the study of power BI on Condor Company as an IOIS in an extended enterprise including dashboards, So, we carried out our semi-structured interviews with managers or directors concerned by business intelligence, IT project and IS in SCM network and expected to have knowledge or experience in these fields.

We conducted more than 12 interviews (for30 minutes to 2 hours) with members of the Information Systems department; Supply Chain department, Quality and Safety department, Security and Environment, Projects department, Communication department,

Trade and Marketing department, Marketing Intelligence department. The target interviewers were CEOs, presidents, vice presidents, directors, or managers in the departments cited above.

3. **Results and discussion:**

Condor is representative of an extended enterprise. It's a (Joint-stock company), specialized in the manufacture of (Electronic equipment and home appliances, computers, agri-food, packaging, construction materials and international trade, It was originally a small business of trade in foodstuffs and transport but today condor represents one of the Algerian companies conglomerates with its 9 partners and more than (« Condor company », 2015.).....

SAP ERP is the information system used in condor, it includes a set of fully integrated modules, covering virtually all aspects of business administration. It is a fully integrated system which allows in real time, the automatic and integrated processing of all the functions, activities and relationships with the partners of the company, as shown in Fig3:

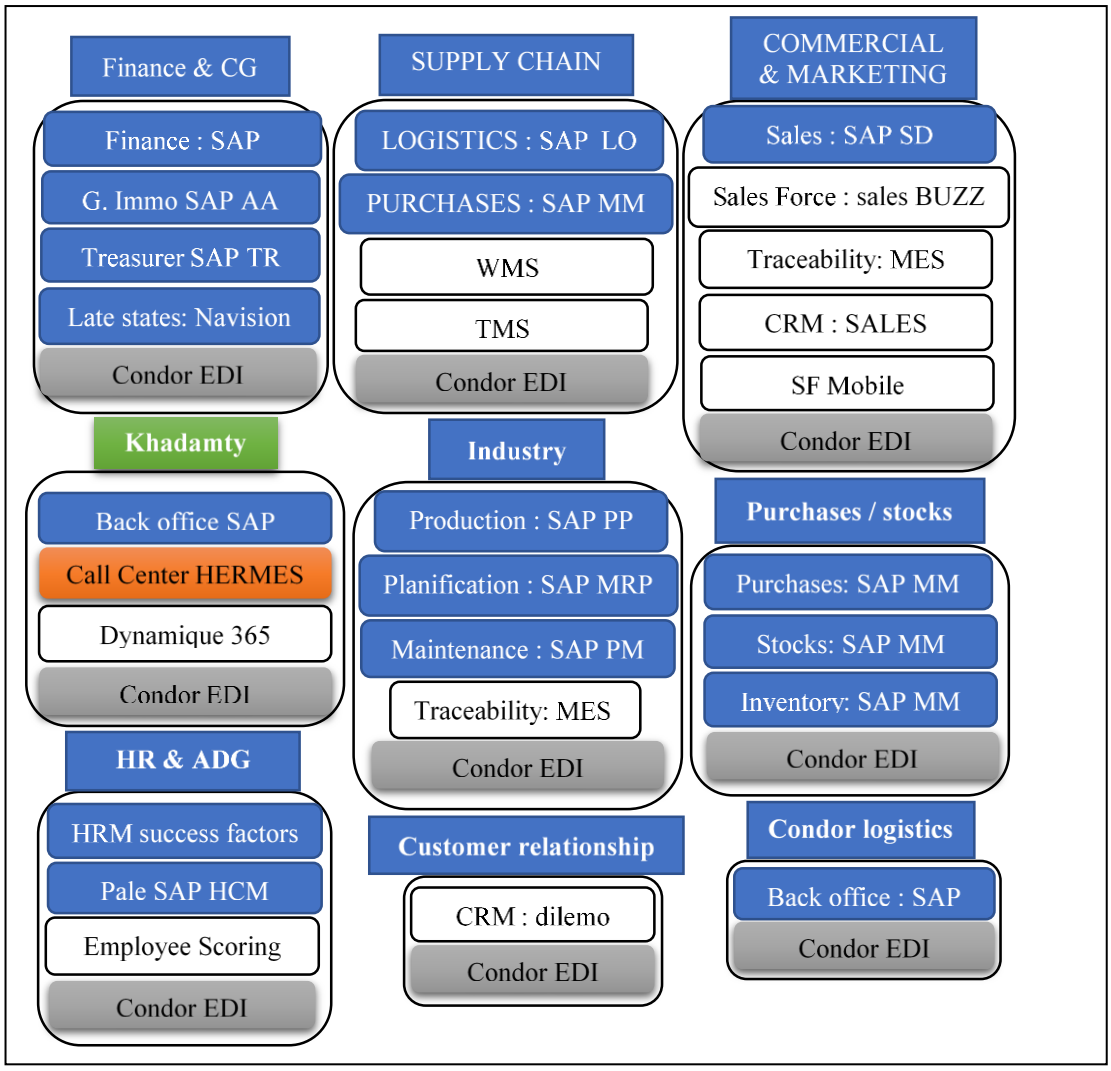
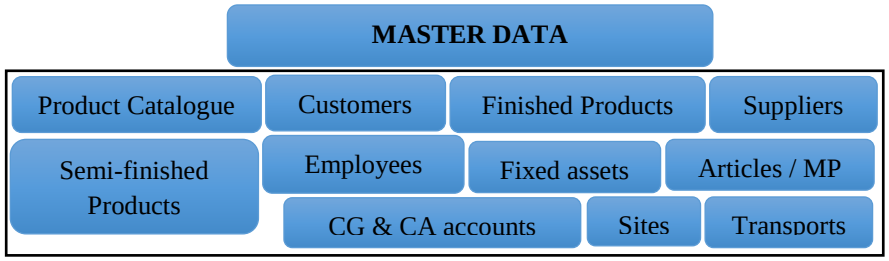



**Figure (3) :** Condor SAP ERP.

In this study, we are interesting by the power BI which is a new Business Intelligence (BI) solution suite system interconnected with SAP ERP, developed by Microsoft and integrated with Office 365. It enables the creation of interactive and dynamic reports and visualization tools while offering powerful and advanced BI functionalities to meet manager's needs. Power BI in Condor Company constitutes an essential means integration and coordination of activities. This is naturally a point crucial in order to ensure an overall consistency of the flows at the interfaces, and then facilitate the management of supply chains, therefore this system provides a variety of in formations summarized in the fig below:




This allows managers to manage and control a many KPIs organized on multi-levels, as example the KPIs of sales include:

Level 1: Product categories - product family – product sub-family – product;
Level 2: Région – province – client;
Level 3: Sales force – supervisors – delegates – region;
Level 4: Distribution channels (distributors - showroom – B2B –Selling Points).

When making decisions, decision maker needs to evaluate the information shown on the dashboard. The decision maker has certain goals to achieve such as maintain all the KPIs in company at their normal level and ensure that the sales are rentable .Once decision maker find cost/benefit calculations pertaining to information sharing among channel partners satisfactory, opportunity will exist for enhanced application of BI .At this level, the CEO controls the process initiation and gradually all levels of the management business processes and the objectives that are to be achieved.

In other hand, we can note that maximizing profit is an indicator of how the company is in turning investment into net income and which products are driving profits .With the help of dashboard, the decision-making process starts with an initial set of decision by the decision maker. These decision is then reflected (update previous decision) on the dashboard and then passed on to the integrated business and engineering simulation in the 'Optimization' block of the Power BI system. The KPIs of the company are observed and sent to the dashboard. By observing the KPIs on dashboard, decision maker needs to update the decision strategy function .According to the updated strategy function; decision maker makes a new decision and updates that on the dashboard (see appendices 1 and 2). The main advantages of this system are:

- Connection to more than 70 data sources including flat files (csv, txt, xlsx,…), database (SQL Server, Oracle, IBM, Oracle, SAP; MySQL,…), online service (Google Analytics , Share Point, Facebook, MailChimp, Zendesk,…), Azure…
- Data drilling, dynamic and advanced tooltips, extraction of intra- and inter-report data with more data consistency;
- Scheduled refresh (up to 8 times a day), Sharing dashboards and reports as an application within or outside the company(for the partners);
- Save time devoted to the analysis and consolidation of the figures;
- Traceability and archiving;

- following up and analysis the evolution of products sales and turnover carried out by each Distribution Department and from one period to another;
- Establishing the dashboard real-time and when we need it.

## 4. Conclusion:

This article provides a short introduction to the use of IOIS and business intelligence in an Algerian extended company. After reviewing the findings of past researches on extended enterprise, IOS adoption impacts and business intelligence, we focus on the case study of Condor Company.

The results show that business intelligence with automated dashboards effectively contributes to providing all the partners with timelier, accurate and complete information sharing for joint decision making; and this will also provide to a company the ability to respond promptly to changes in consumer demand and reduce response time to market needs.

Yet such studies pose certain limitations to its generalization, we believe that, as this study is conducted in an Algerian company operating in specific economic sector, so it is more convenient that the research will be conducted to study whether the shared business intelligence and dashboards and the outlook to information sharing among channel partners are consistently applicable to other sectors.

Future studies can increase the comprehension of shared business intelligence and dashboards by gathering objective performance data. Further researches are necessary to extend the findings of this study.

## 5. Bibliography

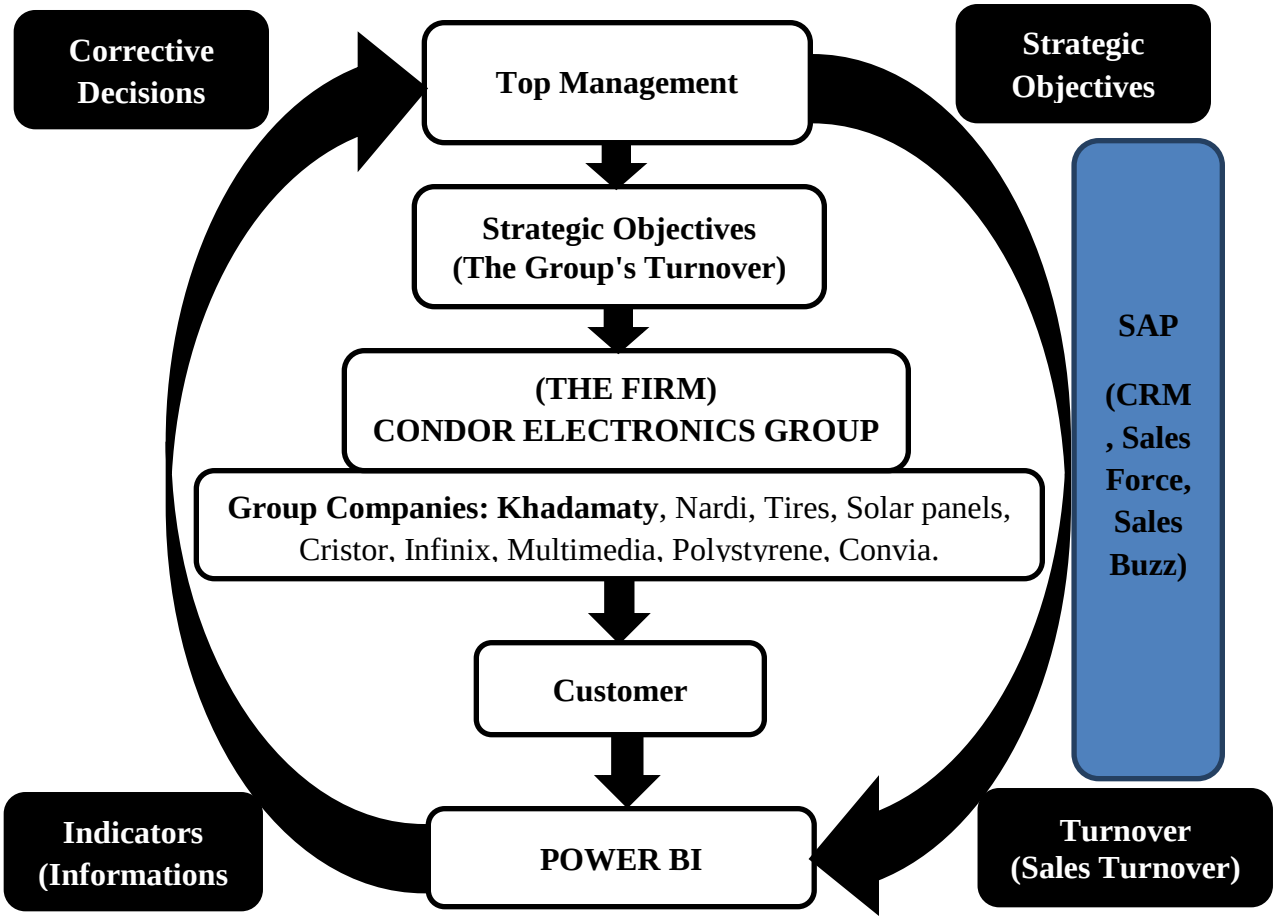

- Ain, N. U., Vaia, G., DeLone, W. H. et Waheed, M. (2019). Two decades of research on business intelligence system adoption, utilization and success – A systematic literature review. **Decision Support Systems**, *125*(April), 113113. doi:10.1016/j.dss.2019.113113
- Asamoah, D., Agyei-Owusu, B., Andoh-Baidoo, F. K. et Ayaburi, E. (2020). Inter-organizational systems use and supply chain performance: Mediating role of supply chain management capabilities. *International* **Journal of Information Management,** (June), 102195. doi:10.1016/j.ijinfomgt.2020.102195
- Bell, N. (2010). *Book Review: Qualitative Research: Good Decision Making through Understanding People, Cultures and Markets*. **International Journal of Market Research** (vol. 52). doi:10.2501/s1470785309201247
- Beske, P. (2012). International Journal of Physical Distribution & Logistics Management Management Article Title Page. **International Journal of Physical Distribution & Logistics Management**, *42*(4), 5.
- Božič, K. et Dimovski, V. (2019). Business intelligence and analytics use, innovation ambidexterity, and firm performance: A dynamic capabilities perspective. **Journal of Strategic Information Systems**, *28*(4), 101578. doi:10.1016/j.jsis.2019.101578
- Browne, J. (1995). The Extended Enterprise — Manufacturing and The Value Chain. **Balanced Automation Systems**, 5‑16. doi:10.1007/978-0-387-34910-7_1
- Condor company. (2015.). Repéré à http://www.condor.dz/en/condor-electronics-en/photovoltaic visited on 1/12/2020
- Corbi, M. et Larivi, N. (2014). Methodes qualitatives, quantitatives et mixtes, 1‑718.

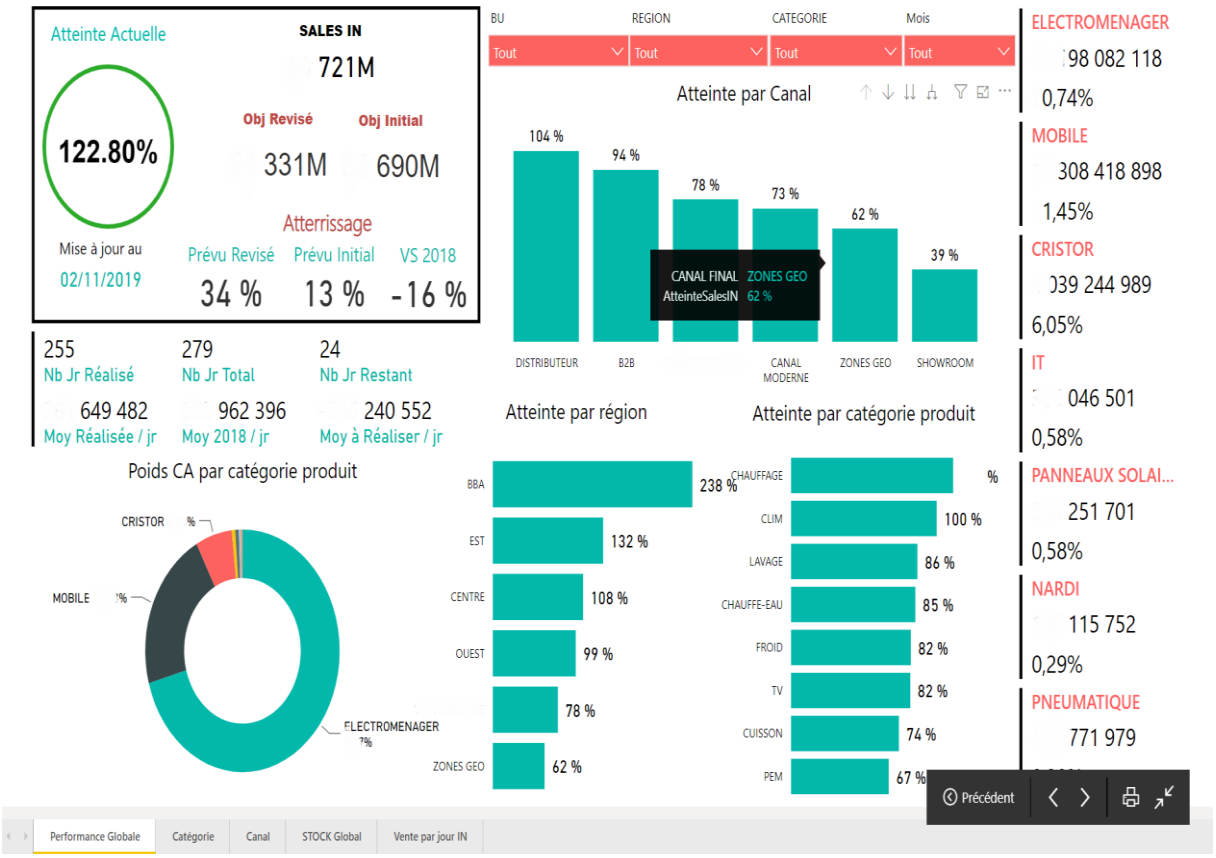
- Deslaurier, jean pierre. (1991). **recherche qualitative:guide pratique.** *Mc graw hill* (vol. 7).
- Dwivedi, Y. K., Wade, M. R. et Schneberger, S. L. (2012). Informations Systems Theory: Vol.2. **Springer**, *28*(November), 461. doi:10.1007/978-1-4419-6108-2
- FulconisFrançois, Meurier Béatrice, P. G. (2019). Capacités dynamiques , réseaux et chaînes logistiques. **revue internationale des sciences de l'organisation**.
- GAGNON, Y.-C. (2017). *L'étude de cas comme méthode de recherche*. *Soins* (vol. 61).
- Geffroy, B., de Corbière, F., Deltour, F. et Lairet, G. (2017). *À La Recherche De La Synchronisation Des Flux : Coordination Informationnelle Et Temporelle Des Activités Dans Un Service De Médecine Nucléaire*. **Systèmes d'information & management** (vol. 22). doi:10.3917/sim.174.0079
- Hlady Rispal, M. (2002). *La méthode des cas: Application à la recherche en gestion. Perspectives Marketing*. Repéré à http://books.google.fr/books?id=KsHqZBYgm08C&dq=mthodologie+phnomnologique+en+gestion&source=gbs_navlinks_s
- Karuhanga, B. N. (2016). 기사 (Article) 와안내문 (Information) [. *The Eletronic Library*, *34*(1), 1‑5.
- Konsynski, B. R. (1993). Strategic control in the extended enterprise. Dans **IBM Systems Journal** (vol. 32, p. 111‑142). doi:10.1147/sj.321.0111
- Korbi, F. B. (2019). Adopting inter-organizational information systems in asymmetrical partnerships: Evidence from asymmetric alliances between tunisian and european companies. **Systemes d'Information et Management,** *24*(2), 85 ‑ 112. doi:10.3917/sim.192.0085
- Krien, N; Michel-Guillou, E. (2013). Powered by TCPDF (www.tcpdf.org) 1 / 1. **How languages are learned**, *12*, 27‑40.
- Kyung Hye, P. et Joël, F. (1997). An Inter-Organizational Information System Infrastructure for Extended (or Virtual) Enterprises. **IFAC Proceedings Volumes**, *30*(14), 43‑48. doi:10.1016/s1474-6670(17)42695-4
- Mourey, D. (2018). Coordination et coopération des supply chains: Un processus dialogique, créatif et résistible qui s'accomplit chemin faisant. **Revue Francaise de Gestion,** *44*(277), 125‑141. doi:10.3166/rfg.2019.00295
- Reimers, K., Johnston, R. B. et Klein, S. (2010). Toward a Theory of IOIS Variance. ***International Journal of Strategic Information Technology and Applications,*** *1*(3), 36‑56. doi:10.4018/jsita.2010070104
- Reinking, J., Arnold, V. et Sutton, S. G. (2020). Synthesizing enterprise data through digital dashboards to strategically align performance: Why do operational managers use dashboards? ***International Journal of Accounting Information Systems***, *37*(xxxx), 100452. doi:10.1016/j.accinf.2020.100452
- Robey, D., Im, G. et Wareham, J. D. (2008). Theoretical foundations of empirical research on interorganizational systems: Assessing past contributions and guiding future directions. ***Journal of the Association for Information Systems***, *9*(9), 497 ‑ 518. doi:10.17705/1jais.00171
- Rowe, F. et Eska, C. W. (2012). *De l ' intégration interne du système d ' information à l ' intégration du système d ' information de la chaîne logistique François de CORBIÈRE *, Frantz ROWE ***.
- Suomi, R. (1992). On the concept of inter-organizational information systems.

***Journal of Strategic Information Systems***, *1*(2), 93‑100.doi:10.1016/0963-8687(92)90006-I

- Tran, S. (2012). Finance Contrôle Stratégie, *2*, 1‑21.
- Tran, S. (2014). *Quelle contribution des technologies collaboratives à la configuration des organisations ?***Systèmes d'information & management** (vol. 19). doi:10.3917/sim.142.0075
- Vajirakachorn, T. et Chongwatpol, J. (2017). Application of business intelligence in the tourism industry: A case study of a local food festival in Thailand. **Tourism Management Perspectives**, *23*, 75‑86. doi:10.1016/j.tmp.2017.05.003
- Villamarín Garcia, J. M. (2020). Contributions from Organisational Collaboration to Business Intelligence Solutions Success. **International Journal of Business Information Systems**, *1*(1), 1. doi:10.1504/ijbis.2020.10012991
- Wang, E. T. G. et Wei, H. L. (2007). Interorganizational governance value creation: Coordinating for information visibility and flexibility in supply chains. **Decision Sciences,** *38*(4), 647‑674. doi:10.1111/j.1540-5915.2007.00173.x
- Zhang, Q. et Cao, M. (2018). Exploring antecedents of supply chain collaboration: Effects of culture and interorganizational system appropriation. **International Journal of Production Economics,** *195*, 146‑157. doi:10.1016/j.ijpe.2017.10.014

**Appendices 1 and 2**




Atteinte Actuelle
SALES IN
721M
122.80%
Obj Revisé
Obj Initial
331M
690M
Atterrissage
Mise à jour au
02/11/2019
Prévu Revisé
Prévu Initial
VS 2018
34 %
13 %
-16 %
255
Nb Jr Réalisé
279
Nb Jr Total
24
Nb Jr Restant
649 482
Moy Réalisée / jr
962 396
Moy 2018 / jr
240 552
Moy à Réaliser / jr
BU
REGION
CATEGORIE
Mois
Tout
Atteinte par Canal
104 %
94 %
78 %
73 %
62 %
39 %
CANAL FINAL ZONES GEO
AtteinteSalesIN 62 %
DISTRIBUTEUR
B2B
CANAL MODERNE
ZONES GEO
SHOWROOM
Atteinte par région
Atteinte par catégorie produit
Poids CA par catégorie produit
CRISTOR
MOBILE
ELECTROMENAGER
BBA 238 %
EST 132 %
CENTRE 108 %
OUEST 99 %
78 %
ZONES GEO 62 %
CHAUFFAGE %
CLIM 100 %
LAVAGE 86 %
CHAUFFE-EAU 85 %
FROID 82 %
TV 82 %
CUISSON 74 %
PEM 67 %
ELECTROMENAGER
98 082 118
0,74%
MOBILE
308 418 898
1,45%
CRISTOR
039 244 989
6,05%
IT
046 501
0,58%
PANNEAUX SOLAI...
251 701
0,58%
NARDI
115 752
0,29%
PNEUMATIQUE
771 979
Précédent
Performance Globale
Catégorie
Canal
STOCK Global
Vente par jour IN


Atteinte Actuelle
CA TTC
17 %
Obj Revisé
Obj Initial
Atterrissage
Mise à jour au
09/11/2019
Prévu Revisé
Prévu Initial
VS 2018
-40 %
-62 %
-38 %
7
Nb Jr Réalisé
25
Nb Jr Total
18
Nb Jr Restant
873 892
Moy Réalisée / jr
799 295
Moy 2018 / jr
163 854 715
Moy à Réaliser / jr
BU
CANAL FINAL
REGION
CATEGORIE
Mois
SALES
Tout
novembre
IN
Atteinte par Canal
B2B 32 %
ZONES 31 %
VENTE SPECIALE 18 %
CANAL MODERNE 18 %
DISTRIBUTEUR 16 %
SHOWROOM 14 %
Atteinte par catégorie produit
TV 22 %
CLIM 20 %
CUISSON 18 %
FROID 17 %
LAVAGE 15 %
CHAUFFAGE 14 %
CHAUFFE-EAU 10 %
PEM 5 %
Poids par Canal
B2B 3.19%
ZONES GEO 5.29%
SHOWROOM 8.57%
DISTRIBUTEUR 79.2%
Atteinte par région
31 %
19 %
18 %
17 %
15 %
ZONES GEO
CENTRE
VENTE SPECIALE
EST
OUEST
Poids CA par catégorie produit
Autre 0.71%
CHAUFFAGE 19.69%
CHAUFFE-E... 2.52%
CLIM 7.39%
CUISSON 6.4%
FROID 12.45%
LAVAGE 14.77%
MOBILE 0%
TV 34.76%
Performance Globale
Catégorie
Canal
Ventes Cumulées
FDV
Historique ventes
STOCK Global
Vente par jour