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## **Quality Assurance in the Management of Financial Regional Information Systems “Case of the DRGKC”**

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### **ABSTRACT**

Our research consists in putting an IT point of view on the quality management of a company, in this case the General Directorate of Revenue of Kasai Central and in proposing some possible solutions to managers who have in their skills the management of this last

we can emphasize that the diagnostic effort made has shown that one of the major problems facing the DGRKC is the fact that this company does not operate as a private institution, but is very dependent on the Provincial Government. of Kasai Central. This state of affairs removes certain principles that the ISO 9001 standards recognize in any company, in particular the responsibility of leadership, financial autonomy and short, medium and long-term planning.

It must also be recognized that this institution is making a lot of efforts to revitalize its system, but despite this, its efforts are not up to the expectation of the population in relation to the data in our possession, these weaknesses are of the kind ; lack of control in the circulation of printed securities, lack of a database that can help this institution to be able to properly manage and store its taxable persons.

In view of the weaknesses revealed by this institution, we recommend to the Provincial Government via the Governor of the Province who is the only person authorized to be able to control this institution to be able to mobilize enormous efforts both intellectual; organizational, material and financial to remedy this situation in addition, we propose a computer model for an effective integration of the said system.

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### **I.INTRODUCTION**

The evolution of new information and communication technologies has caused various adjustments in leadership agendas. The more the different scientific disciplines change in nature, the more the sciences continue to adapt to technology: from mathematics to IT management and from management to IT management, etc.

All these changes have led to the notion of information system which is the subject of our study. There are information systems linked to any human organization, but the latter always poses a serious problem of its management, its efficiency, its survival and also its maintenance, both permanent and evolutionary.

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### **II. DEFINITION OF CONCEPTS**

#### **II.1. COMPANY INFORMATION SYSTEMS**

In the previous part, we were able to highlight the characteristics of a quality approach within an organization, its challenges, principles and difficulties. We have glimpsed the share of information and documentation management that such an approach requires: formalization, communication, performance monitoring, etc.

However, before going into more detail on this aspect of the quality approach, we are going to study the field whose vocation is precisely the control of information management in companies: the field of information systems.

In this part, it will be a question of defining the information system, of exposing the stakes for the company, of presenting its various variations as well as the place which is granted to it in the organization and finally of underlining the main difficulties. of an information system project.

## II. 1.1. DEFINITION AND PRESENTATION OF AN INFORMATION SYSTEM

### II.1.1.2. DATA, INFORMATION AND KNOWLEDGE

Before defining what an information system is, it seems necessary to define the very term “information” and to distinguish it from the notions of “data” and “knowledge”.

Kenneth Laudon, professor of information systems at New York University's Stern School of Business, and Jane Laudon, management consultant specializing in information systems, distinguish information from data as follows.

“The term “information” covers data that is presented in a form that is useful and usable by people. Data, on the contrary, are raw values representing events that take place inside or outside organizations. They have not yet been organized in a way that users can understand and use them”.

Knowledge is a more abstract concept than information and data. Also called “knowledge”, Jean-Claude Tarondeau, professor at the University of Paris X - Nanterre and at ESSEC, defines it as a set of beliefs about the cause and effect relationships between phenomena. This notion comes under the “why” while skills and know-how come under the “how”. According to him, “knowledge and the application of knowledge in action constitute the foundations of capacities and skills”.

### II.1.2. WHAT IS AN INFORMATION SYSTEM?

#### II.1.2.1 Definition

An information system (IS) is a set of human, material and organizational means for collecting (or retrieving), processing, storing and transmitting information within an organization.

The use of the term “system” is not insignificant. It is, in fact, the translation of the systemic theory, presented earlier, applied to information and communication technologies (ICT): an information system is a system made up of human and artificial systems (or materials). The complexity of an IS arises from its human component, itself complex, that is to say, not regulated by predefined laws. At any time, decisions or external disturbances will imply an evolution of the human organization and therefore modify the relevance and performance of the IS, for this one.

The term “information”, too, is not insignificant. It is a matter of dealing with material that is immediately understandable and usable within the system, or even beyond its borders.

#### II.1.2.2 Typology

We can distinguish different types of information systems according to the information medium and the tools used :

- Informal IS: they “depend on non-predetermined rules of behavior”. These are, for example, discussions around the coffee machine, rumors or social networks on the Internet.
- Formal IS: unlike informal IS, formal IS are structured and operate according to predetermined rules. They are usually supported by dedicated, man-made tools. These are, for example, computerized IS.
- Computerized IS: they are based on computer and telecommunications technologies.
- Manual IS: they use “traditional” means such as paper and pencil. Now, with the rise of new technologies, the term “IS” generally indicates a formal computerized information system.

#### II.1.2.3 Borders of an IS

An information system can be completely internal to the company, in which case its borders are those of the company. But it can also allow the exchange of information between the company and its environment. The IS can then be opened up to suppliers and partners, to customers, and even to the general public.

It is up to the company to determine the boundaries of its IS knowing that they can be multiple. One application of the IS is reserved for company personnel and another is accessible to customers.

The IS of a company then has both an interest of internal organization but also of organization of the exchanges with its environment.

### II.1.3. THE IMPLEMENTATION OF AN IS WITHIN A COMPANY

The implementation of an IS within an organization is a project in its own right. Let's see the characteristics of this type of project and the modalities of its development.

#### II.1.3.1 An organizational project

If from now on, the majority of business information systems are wholly or partly computerized, they cannot be reduced to their simple technical component (hardware and software).

Setting up or improving an information system is first and foremost an organizational project, which will eventually be supported by computer applications.

It is a question of identifying the flows of information crossing the company, even between the company and its environment; to identify existing dysfunctions; to improve the system by changing the supports, the working methods, even the jobs and the skills required.

The analysis of the existing information in particular involves the modeling of the flows and the different states of the information and the documentation of the company. This formalization promotes a step back and the detection of material and organizational anomalies

## II.2. Management:

Management is the art of leading, directing, motivating and controlling the members of an organization, by establishing links between the various players in the system for the sake of coherence and efficiency. The style of management can vary according to the profile of the leaders, the nature of the environment and the size of the companies (Olivier MEIER: 2009).

### II.2.1. Activity :

For Alain Bitsamana, an activity is a set of operations performed by a company in order to achieve the corporate purpose.

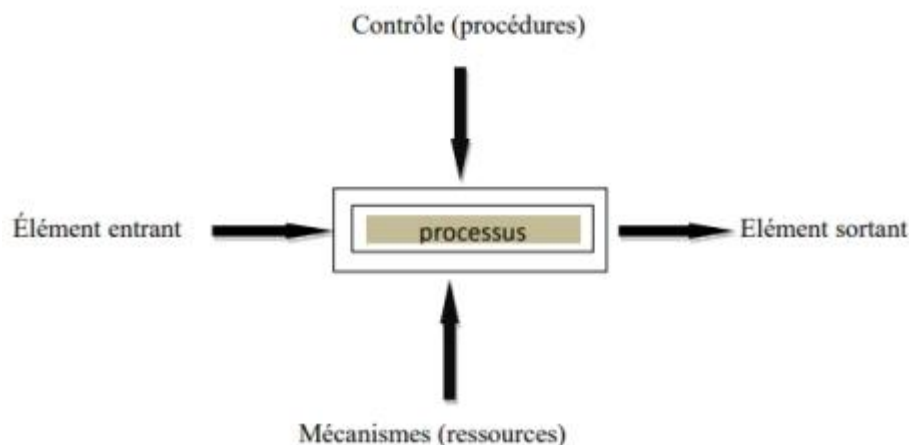
These operations are distinguished into main activities, i.e. those which correspond to the purpose of the company and represent the most important part of the turnover or added value, and into ancillary activities, that is to say those which complete the operations or are in their consolidated financial extensions.

### II.2.2. Process :

For Olivier MEIER (2009), a process is a sequence of actions or activities, structured and continuous, carried out sequentially or in parallel, combining and implementing multiple resources, capacities and skills, to produce a result. or output.

Denis MOLHO & Dominique FERNANDEZ-POISSON (2009) add that a process must, by definition, offer a service to customers, and the choice of processes depends on the activities and priorities of each internal or external company concerned.

ISO 9001: 2005, on the other hand, indicates that a process is a set of interrelated or interactive activities that transforms input elements into output elements. It can be represented as follows:



Managing processes means mapping them, identifying process owners, measuring, analyzing and improving processes. Thus, according to Hélène LÖNING & al. (2008), we can classify the company's processes according to different criteria, namely the main processes which lead directly to the end customer (for example the process of order taking-delivery-invoicing-collection) and the support processes which contribute more or less directly to the functioning of the main processes (for example the recruitment process). Pierre LONGUIN & Henry DENET (2008) add that the number of processes must be limited.

For them, the processes are classified into three (3) main categories, namely :

- the management or direction processes (strategy) which reflect the business plan;
- the production processes (business) which directly concern the manufacture of the product or the preparation and provision of the service;
- the support (or support) processes which bring together the means necessary to carry out the processes without having a direct impact on the product delivered or the service provided to customers (supplychain).

Michel BELLAÏCHE (2014), adds that in a quality approach: the quality management processes give direction and objectives to the quality approach, pilot it and ensure continuous improvement;

Support processes provide production processes with all the resources they need to produce, whether material or immaterial;

The production processes go to the end customer and make a direct contribution to the added value of the product or service. Good process monitoring must be justified by prior validation of these processes. According to Caroline FRECHET (2005), this validation must review the various indicators and confirm that the levels reached previously have not been modified and that the process has not drifted. It is therefore a question of reviewing all the elements detailed in the control phase and determining any variations.

- Customer: A customer is an actual or potential buyer of goods or services offered by a company. The client can be a natural person or a legal person. We speak of an "active customer" when the customer's last purchase is recent enough, given the normal pace of the commercial relationship developed with the latter, to assume that he will soon make a new purchase.
- Audit: The audit is a systematic and methodical, independent and documented process allowing to collect objective information on the situation of a company, to determine to what extent the elements of the audited system meet the requirements of the reference frameworks of the field concerned (logic of compliance with the provisions initially defined). The audit can relate to a system, to products or to processes.

It focuses in particular on detecting anomalies and risks in organizations (Olivier MEIER, 2009). Alain Bitsamana HILARION (2003) defines the audit as a critical analysis of the operations carried out by a company conducted by reference to recognized standards, techniques and procedures. For him, the accounting audit consists in studying the regularity, the sincerity and the exhaustiveness of the accounts and financial statements of the company, in order to formulate and guarantee an opinion with the recipients of the audit report. According to ISO 9000/2008, auditing is a methodical, independent and documented process for obtaining audit evidence (records, statements of facts or other relevant and verifiable information) and evaluating it objectively to determine in the extent to which the audit criteria (set of policies, procedures or requirements used as a reference) are met.

- The audit can be internal: That is to say practiced by the internal auditor, or external (external audit) that is to say practiced by an external auditor. According to the French Institute of Internal Auditors and Controllers (IFACI), internal audit is the periodic review of the instruments available to management to control and manage the company. This activity is carried out by a department reporting to the management of the company and independent of the other departments. Checks whether the procedures in place include sufficient security, whether the information is sincere, regular operations, efficient organizations and structures. Internal audit can also be defined as "an independent and objective activity which gives an organization assurance on the degree of control of its operations, provides it with advice to improve them, and contributes to creating added value". It helps this organization to achieve its objectives by evaluating, through a systematic and methodical approach, its risk management, control and corporate governance, and by making proposals to enhance their effectiveness".
- External audit: Is defined on the other hand, as an audit carried out by a professional external to the company, an activity consisting in verifying and expressing an opinion on the accounts of the company and their conformity with the generally accepted principles in terms of audit. recording, presentation and valuation. It can be legal (auditing), or contractual.

### II.3. The quality :

Very often, the term "quality" is interpreted in very different ways. In everyday language, we speak of a first quality product, which means that the customer is satisfied with the goods and services offered. For him, quality is synonymous with satisfaction. For the company, on the other hand, quality means, for example, the rapid availability of products to customers.

"The search for quality is certainly one of the most notable areas of change that our organizations have experienced in recent years and everything indicates that this search will continue for a long time to come".

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## III. METHODOLOGY

To properly conduct this research, we used the systemic approach followed by documentation, interview and documentation..

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## IV. CASE STUDY

### IV.1. Resource analysis

#### IV.1.1. History of the General Directorate of Revenue Kasai – Central

Initially, financial authorities did not exist, taxation in its entirety was managed by national financial authorities; in particular the DGRAD, DGDA, and the DGI, but this management always posed difficulties in its provincial implementation.

Considering the decision taken by the National Assembly by the vote of the system of decentralization in the constitution of February 18, 2006 in its article 204 in paragraph 16 which gives to the Provincial Authority and to the decentralized territorial entities the autonomy of management by retrocession of provincial taxes, duties and fees.

Considering the foregoing, there was the promulgation of an organic law n°08/012 of July 31 bearing fundamental principles relating to the free administration of the provinces thus, those for the confirmation of the said autonomy of management envisaged by the constitution for provinces and decentralized territorial entities.

It is by the promulgation of this last law, that the Province of Kasai Occidental set up an edict n°02/KOCC/2008 of July 08, 2008 establishing the Brigade of Mobilization of the Revenues “BMR” in acronym.

After five years since its creation, it had many shortcomings which made it difficult to maximize the mobilization of the Province's revenue, in particular structural and human life shortcomings.

Moreover, it was noted that the structural shortcomings of the BMR were coupled with a clear absence of an incentive policy for maximizing revenue to the great detriment of the province.

This is why, by the edict n°017/KOCC/2013 of May 24, 2013 establishing the General Directorate of Revenue of Kasai Occidental, comes to transform the BMR into DGRKOC endowed with administrative and financial autonomy.

It should be noted that the DGRKOC created to correct the shortcomings and inefficiency of the BMR, is embarking on a profound reform with a view to providing the province with the means of its policy and to rely heavily and truly on its own resources so as not to depend entirely retrocession and exceptional receipts.

Finally, the transformation of the DGRKOC into DGRKAC, it was created in relation to the division according to the provincial decree n° 01/14 / CAB / G.P / K.C / MKM / 034/2019 of June 10, 2019, the General Directorate of Revenue du Kasai Central was put in place to correct some structural and functional weaknesses of the dismembered General Directorate of Revenue of Kasai Occidental, whose main mission is to provide the Province with the resources necessary for its development.

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## V. Discussion

The results of our research show that despite the institutionalization of this company, this entity of financial law functions as an organization taken in a vice by the Provincial Government because it never functions as an institution which is free in its decision-making.

In addition, its information system does not have a specific place for its storage at the risk of losing the information and this due to the fact that each time the Governor of the Province comes to head this Province, the latter always has carried out a reshuffle of the few agents at the very risk of losing data important to the proper functioning of this entity, and we also noted that as this company changes its name, there is always a loss of data even causing the volatilization of funds, which does not allow decision-makers to take decisions on time and at a well-determined moment.

The operation of the computerized information system, despite the fact that this company subscribes to several banks, is based on trial and error processes.

From the above, we could say that the quality assurance in the management of the information systems of this institution does not meet the requirements of good governance which stipulates a decision-making power at the level of the institution. In addition, this institution seemed to us more political than managerial. Furthermore, the lack of proven specifications and planning shows that the computer system does not meet the security criteria.

The analysis of the organizational process shows that the information system is not secure where it is exposed to risks of all kinds :

- Human risks: each visit of the Governor of the Province, there is always a change of personnel, i.e. the Director General and the latter also changes other agents to replace those of his political allegiance as a risk this system does not ensure confidentiality insofar as the poorly paid and dissatisfied typesetter can always haggle over the printouts.
- Material risks: after verification, the materials of the DGRKAC are not protected against the eventualities of the natural, nor the fire and also the absence of a technical partner which constitutes a vulnerability of the computer equipment.
- Organizational risks: access to the system is privatized, only the Central Supervisor who is the sole consultant for data compilation at the bank level. With such a practice, the information system of this institution depends on a few individuals and escapes the control of decision-makers.

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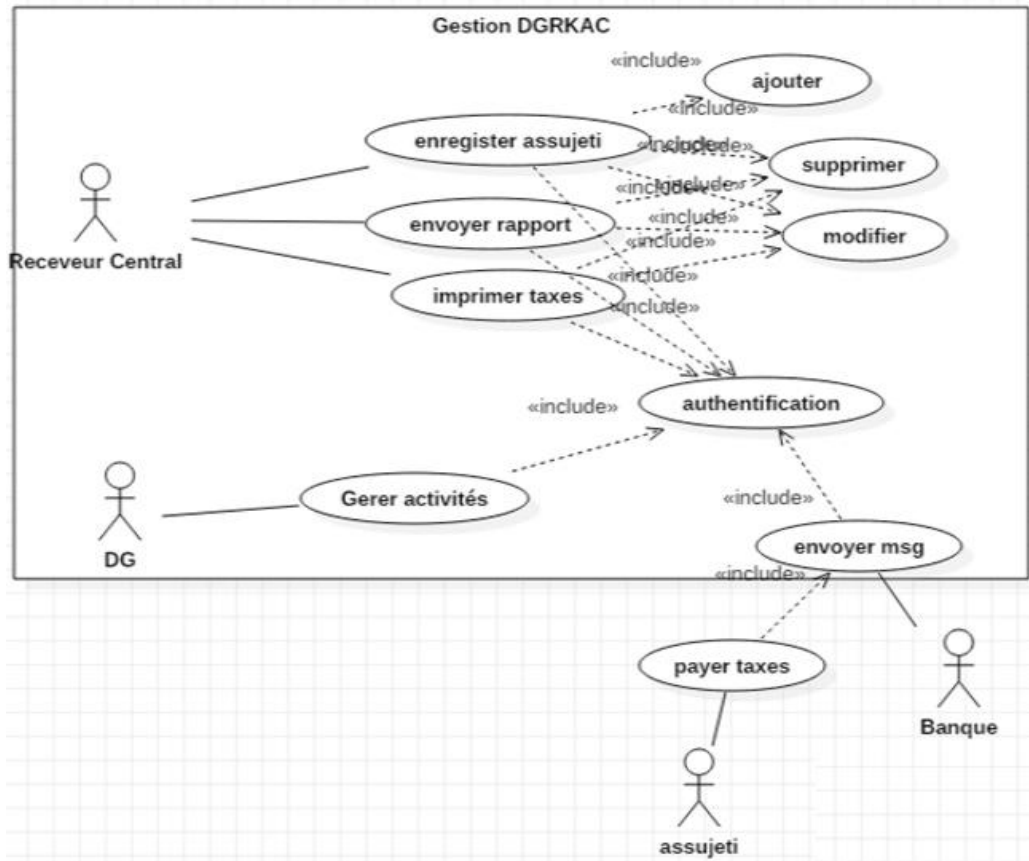
## VI. Development

At this level of our work, we would like with regard to the diagnosis raised, to propose some models which plan tasks which are the subject of computerization. It is, in clear terms, the application for the identification of taxable persons, a decision-making system for tax management and an intranet network via the Internet.

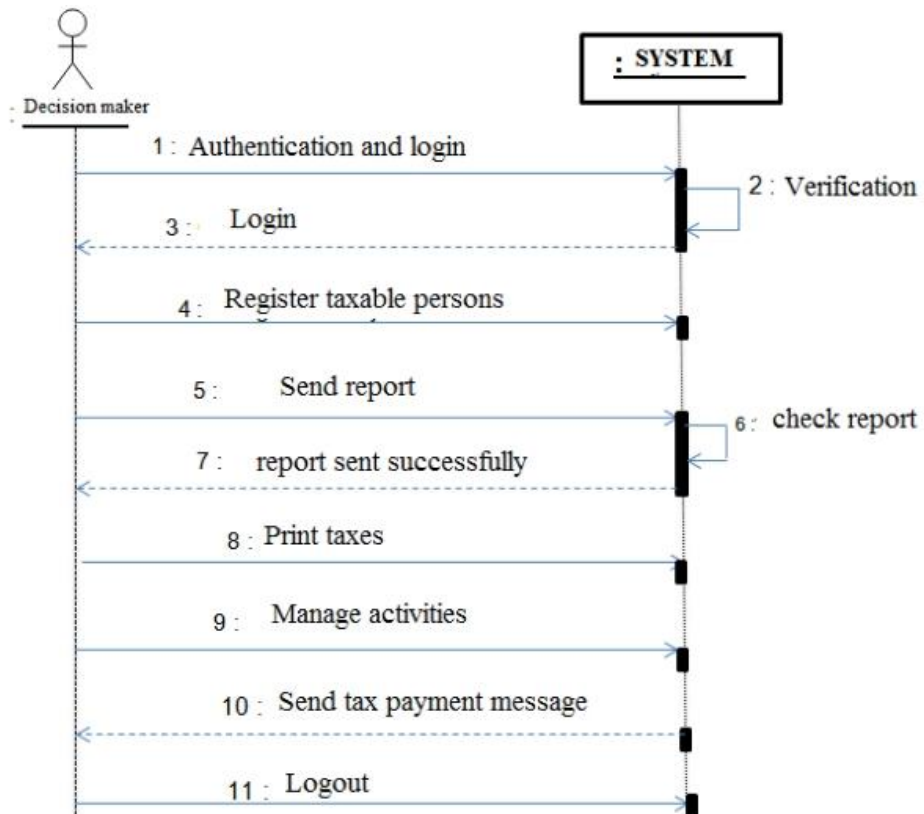
After defining a client-server tool for managing and manipulating taxes, which we will call BIPAD (taxes agents Business Intelligence Partners for Analysis and Design). The construction of SIDs by reuse consists in adapting more particularly the Main Receiver to the context of the decision-making project to be developed.

This context is that of the valuation of existing data from business applications in order to facilitate decision-making. It is defined by specifications and documentation on business activities

Use case diagram



Sequence diagram



**c) Dimensional modeling**

Dimensional modeling is a logical design method that aims to present data in an intuitive form, which allows high-performance access. This modeling is more interesting than entity/association modeling in the case of decision bases.

We will focus on dimensional modeling, presented the related concepts (fact table, dimensions, measures). Then we present the different models and forms of data warehousing (star, snowflake, and constellation).

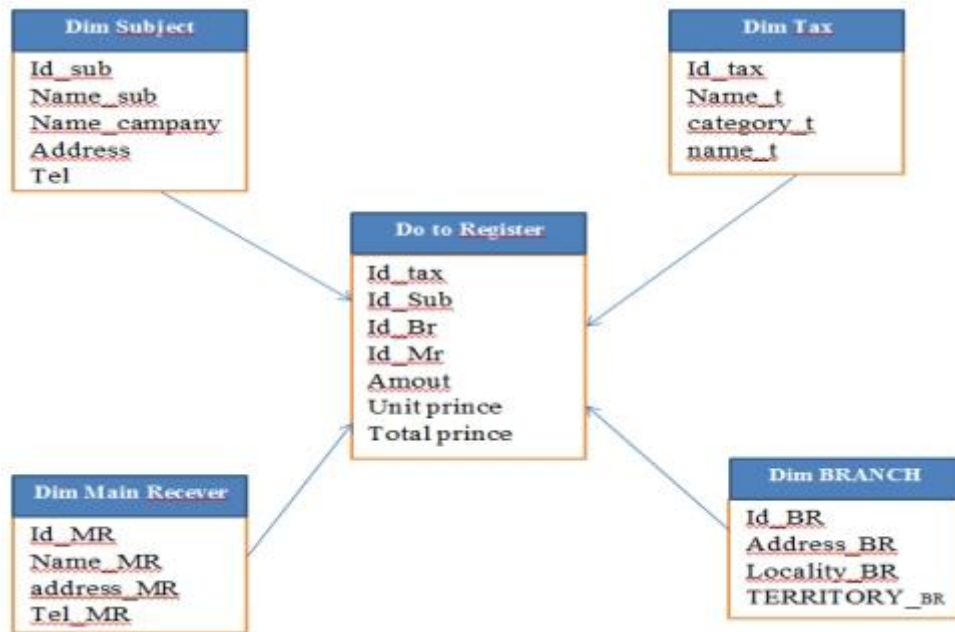
The dimensional model aims to present the data in an intuitive form whose objective is to approximate the way decision makers perceive the analysis data.

This model designates the most adaptable data structure to model the large mass of data stored in a data warehouse.

Conceptually, this multidimensional modeling gave rise to the concepts of fact and dimension.

However, this model is based on a fact table and a set of smaller tables called dimensional tables. Each of these has a unique primary key.

For our case, the dimensional model looks like this :



**d) Application for the identification of taxable persons**

**DEMOCRATIC REPUBLIC OF CONGO**  
**PROVINCIAL MINISTRY OF FINANCE**  
**DIRECTORATE GENERAL OF REVENUES OF KASAI CENTRAL**

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Passeword:

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## Conclusion

Drawing a conclusion from work inspired by the practice of information system management in the business world, work to which we have spent a little time, is also an opportunity to take stock of the results obtained and comment.

The end of our work could in some respects be the beginning of another. In the sense that it could present a character of incompleteness and incompleteness at the level of the questions raised, the justification of the choice of methods and techniques of research, analysis of data etc.

We also accept that one approach cannot exhaust all aspects of a phenomenon. It is the set of several methods that we could manage to identify a reality.

Let us be allowed in ending to underline that this work constitutes for us an introduction to the problem to which we would like to devote ourselves in the future, namely quality assurance in the management of information systems of financial authorities in the DRC. which are being transformed under the impetus of new information and communication technology.

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