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Student: Edgar Fornieles Picas

Supervisor: GUO Bin

School of Management, Zhejiang University

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Student name: Edgar Fornieles Picas

Certification: Degree on Informatics engineering

Credits: 37.5

Supervisor: GUO Bin

School of Management
Zhejiang University

As advanced student in the program of Business Management (工商管理)

QUALIFICATION: 9.2

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1 PART: QUESTIONS
1.1 What is Business Intelligence?

First of all let’s get a definition to the concept ‘Business Intelligence’ (BI). BI can be defined as a group of techniques and tools used to create, manage and analyze all the business data in an organization or enterprise.

Since this techniques are computer-based it’s commonly refer to them as BI technologies. This technologies deal with business operations offering to the user the possibility to check and study the historical results of this business operations, analyze and control the current ones and predict the views of the upcoming ones.

There are lots of common functions that can be related with business intelligence, they are going to be explained more deeply in future chapters, but now just as a mention let’s introduce some basic ones like: reporting, online analytical processing, business performance management, text mining or predictive analytics.

These tools are based on the same concept, use an information system created from the information extracted of the different systems of the enterprise and its scope, or explained in an easier way, this tools use the information collected from the different departments (production, accounting, logistics, human resources, etc.)

With some tools, the information can be extracted transformed and loaded, what is known as ETL process, this means that in the beginning the information should be extracted from many different sources, then this information should be processed and standardized and finally can be uploaded to the Data Base (DB) for its final use.
With all this procedures can be obtained real knowledge of the business being able to improve your strengths and solving your weaknesses, and all this, transforming data without single value to useful information and then studying these to get the real knowledge.

After this information is in the correct way and on the correct place, can be treated using different BI tools in order to achieve the said benefits.

Depending on the final BI tool used the results obtained will be ones or others but what has already been proved it’s the efficiency and really improvement obtained by using BI tools.

And without further delay, let's get started!
1.2 How to start with BI?

This chapter just has one way to be started and it’s making clear that business intelligence it’s a set of techniques and tools and in consequence without people that makes use of that knowledge or use them properly as tools it achieves nothing.

That is the reason why business intelligence not just rely on the newest or best tools, it’s real core are the people who is going to take profit using them and they are the ones who are going to establish if a business initiative has been successfully introduced or not.

Does this mean that all the responsibility of a success or not of a business initiative relies on the people who are going to use it? Of course not!

As technological tools that they are should be enabled by technology and this step cannot be avoid, but anyone interested in this field should know that putting all the efforts just on the technological side it’s an almost sure way to a failed deployment. And instead if the ones interested in a business solution not just take care about which tools are the most suitable for its own interest but also take care of the people responsible for the project and the ones who are going to be related with, can ensure that the probability of a successful business intelligence deployment will grow exponentially.

“Business Intelligence is not just about technology and cannot be effective in isolation. To live and breathe it needs to be part of a broader framework covering the questions that its users need to answer, the actions that they take based on these answers and the iterative learning that occurs in the process.”

Peter J. Thomas (Ref 1)
1.2.1 What to look for?

If you are the one responsible to look for a Business application that can improve the results of your enterprise one of the main problems that you will have to face is the fact to know what are you looking for, and that's like this because even there are a lots of different applications related with BI, usually they can get all sort of different names making confusing the task to choose which one is the one that you are looking for.

This obstacle appears because many techniques and tools all the same can be defined with a very wide range of names depending with the persons that you are dealing with.

The most common name that can be given to BI is as simple as reporting; of course BI goes well beyond than provide you a simple report but it’s also true that reports can be considered as a basic piece of BI.

Other valid way to call BI and considering that analyze data is another one of the basic functions that can be attributed to BI is ‘business analytics’. This name can make the customer feel like the only advantage that’s going to be improved is the fact to analyze the actual data which is totally inadequate and incomplete so BI can provide also many other advantages, but if you are looking for this kind of improvement it’s also true that BI can satisfy your needs.

Instead of the previous ones if you consider just to find a way to realize some market research you should be looking for the ‘competitive intelligence’ name of BI. That means that you still looking for a BI tool, just that in this case the tool found will be more focused in the business field and probably will use some business argot that can make you feel that you just found what you are looking for.
If your problems are related with the decision making process you will be pleased to hear about BI when takes the name of ‘decision support’, which again is an almost appropriate name for BI because although it is true that is one of its functions, again not cover the full spectrum of what BI concerns.

The point on introducing all this concepts is no other to help the reader to understand that the importance about the name of the BI application do not resides in which functionalities I’m getting, but how this name can affect to the user to feel comfortable with the solution and give rise to an interest for the new software to the real final users.

With all this also want to be said that BI are tools and techniques, and some of them with a defined objective so looking for some concrete functionality someone’s can find himself looking into BI but BI globally it’s the set of all this functionalities together, and as much as the name can change, the global idea of BI will remain intact.

1.2.2 How to (not) find Business Intelligence?

Nowadays when someone feels interest in a subject the first reaction is investigate about this, get some basic information to decide if the subject really deserves to give it a chance and try to understand it more deeply.

Business Intelligence as long as belongs to an area of the business world it should have its own acronym and for obvious reasons it has became BI. But this can be a problem if you have not so much idea about BI and want to get some information, that’s why it is going to be shown what other subjects with the BI acronym are not Business Intelligence.
The first step that everyone will take can be look for some information in public access information pages like ‘Wikipedia’ if the reader decide to take this as its first step should know two basic things, the first one is that will find around fifteen different acronyms for BI (depending on language), and the second one is that even if found the good one “Business Intelligence, in information technology, the discipline of dealing and analyzing business-related information” (for English version) the information that can get from there will not take him further than a mere description of what is BI with non-value if it’s really interested in use this technology due to the lack of real cases and proved experiences in this field.

Continuing with the acronyms problem, once you are in a business environment it’s also possible to hear about that acronym and the subject in case not be Business Intelligence. If there’s some investment related with business this also it’s commonly called Business Investment (BI) and of course, Business intelligence can be treated as a Business Investment but these concepts are totally different. The reader should have some interest in the Business informatics (BI) field as long as it’s reading this lines but the true is that this field covers much more than just Business Intelligence. The last acronym that it’s going to be presented (which not means that these are all) it’s Business Insight (BI) and this is something that also Business Intelligence can provide but it’s just a small portion of the big cake that it’s Business Intelligence.

1.2.3 Why (not) use Business Intelligence?

After reading the main description should be much more clear the general idea about what Business Intelligence can provide to a business, but it’s important to study for each field what kind of advantages can an enterprise achieve from the use of BI.
As improved reporting tools, we can expect from BI an improved control about what and why it’s happening now with our business and act according to the real actual situation.

Before, BI managers and responsible people just can check the status of a process in concrete stages of the business plan, this means that this people just can know if something was wrong when already has been finished in the wrong way, so if we are talking about finishing a project without budget or with exceeding costs they can just know when it’s already done with the evident not convenient consequences. And this also means that they will be working during the total period before those results without a fixed idea about how things are going.

What BI can provide to this group of people are dynamic, flexible and constant reports about how everything under his responsibility is going. That means that if at any point and moment of a stage some process exceeds his cost they will know and be ready to prepare a solution for that gap.

With BI tools they can control all the estimations and check if any of them are running out of order, can also control the ideal flow of personnel of every single stage and moment to get the most accurate results, and not just this it’s also useful to plan and estimate how should prepare the future plans according how the present ones are going.

With all this tools the situation of this group of people will change from the previous one where they after something wrong have to decide how to solve the problem and alleviate the current troubles caused by it, to a total control to detect a problem in real time, discover which are the causes and solve or treat it in the right way.
Once overcome all the management and control procedures also should be thought about business performance, how can be increased the gain and how to decrease the costs.

This can be also done by using BI in the proper way and this way it’s as simple as using BI to detecting the bulbs that offer higher returns and discarding the ones of questionable return.

One more time and applied to this case we can take advantage from the dynamic performance of BI tools, which let the personal to know about all this performance in real time facilitating the task of classify and give the appropriate treatment to the important targets and also releasing them to take so much care about low profit targets, and of course all this before ignoring the difference between targets result in a real financial cost.

Again and again should be remembered and remarked that even its true that BI can provide all this advantages just resumed, should be also known that without people behind this tools to make everything work properly, get the results and interpret them in the correct way it’s an essential point in any successful BI implantation.

As far as here haven’t seen yet any real ‘in time’ operation that can be improved by using BI tools, what it’s coming are some ways in which BI can improve your operations ‘in time’.

Some operations can wait until someone get a report with the results, must be attended in the same moment of its appearance; a good example to illustrate these cases is the use of BI in a buying/selling platform.

Until now when a customer want to order a good first the seller must check that this good still in stock, create a selling order with all its related information, update the stock amount and many other processes related with this good.
What BI can do for this kind of processes is execute all the previous actions and make sure that all of them are correctly detailed in the system creating and saving its corresponding information as well as updating in real time the related information that can be affected from these changes. This means that nobody can order a good if all the stock it’s already sold out and since the moment of BI take care of this, it can be done in real time avoiding problems that can cause a late updating of the stock information.

This also can help to achieve a great improvement in situations that need real time actions done by staff, in these cases the problem lies in how many people should be working at each time. With the reports provided by BI the levels of staff at any time can be maximally optimized achieving the optimal staff levels at each time. Which means that the processes will be always at his full capacity providing all what is needed anytime but also means that will not be a waste of stuff when they are not needed. An example of workload graph can be appreciated on Figure 1.
Another aspect that can improve is the efficiency of operations. BI can assess every single step in complex operations and reveal which parts are not working as they should or which ones should be improved.

With this information a single task can be improved before the customer report a bad function of the general process with the consequent bad results. This means that by using BI to analyze the processes can be detected where they are having troubles and find the better to solve or fix them.

Another advantage that can be achieved by using BI processes is the opportunity to improve the customer service analyzing the situations where the client can be rewarded within increasing the company costs, or offering them special offers or treatments in appropriate situations.

And these are just single examples from a long list of successes achieved through the use of BI.

1.2.4 Will everyone use BI?

It’s evidence that nowadays almost every single worker in an enterprise is trained and able to use a computer in a higher or lower degree, but what it’s not so evident is that all this users are willing to depend on that computer knowledge and rely on these tools that sometimes barely can use correctly. That’s why even if the ideas are so innovative and can provide great improvement to a business also shall be considered how the real users are going to react in front of this considerable changes, and consider maybe to implement these processes and tools gradually to ensure a better adaptation by staff.
As a fact should be considered that actually nearly fifty percent of the global workers are older than forty years what means that most of them are not so confident with all the new technological implantations and may feel some reluctance to completely change the way that have been working during his whole life, even if this way is far more better than the traditional one.

For this reasons when one tool have to be chosen the decision not can be just done depending on the company technological requirements but considering as important factor the workers who will make use of it.

An amazing thing, the human brain. Capable of understanding incredibly complex and intricate concepts. Yet at times unable to recognize the obvious and simple.

Jay Abraham(Ref 2)
1.3 Benefits without risk?

1.3.1 Crisis and BI

In recent years has become a constant in every industry and field that many new emergent technologies even with a good basis or acceptable results stumble and fall because of the recent global crisis.

BI was one of the candidates to fall like a good idea in bad times, but the incredible results achieved by all sort of industries, companies and in all different fields has ensured a highway to the success of one of the new star technologies of the recent years.

As new technologic idea emerged in the early 90’s moment since when start changing the fate of many enterprises and industries in a revolutionary way helping to achieve unexpected positive results. As can be seen in Figure 2

![Figure 2: Earnings with/without IT investment](image)

This positive result of last years has pushed BI to the top investment priorities of many companies increasing the available solutions and also helping BI to mature and acquire solid basis to not tremble even in tough times.
Also the constant increasing knowledge of this field from all kinds of sources has made BI become an important factor at all levels of an organization making his consideration as a critic mission essential for any kind of business.

1.3.2 BI growing wider and higher

By this previous words just want to be said how BI has been constantly growing in all aspects during all his history since his first steps.

It the beginning just as a compound of different tools provided from different sources with its corresponding costs of joining all this technologies and acquiring them separately.

But even in this primitive way the results given by BI where considerable enough to invest in more investigation and also to attract new users to explore this field of possibilities unreachable before, because if BI can really provide something this is relevance, and with this words just want to be said that, by using BI a common user can get what really needs in less time or complete a task in an easier or faster way providing the a real enhancement in his goals achievement.

Another fact that has been clearly favorable to the BI growing has been that in recent years all the enterprises has considerably increased his information, and for information here should be understood relevant data achieved. Which by one side it’s a good fact, as long as can help the enterprise managers to understand better how is his enterprise working and be able to study all the details, but also has become a problem since some of this people can feel saturated of information and spend hours and hours just to find some basic information.
Let’s see two Figures (3 and 4) that will illustrate this situation.

![Digital Information Created, Captured, Replicated Worldwide](image)

**Figure 3: Information growth**

![Information Creation and Available Storage](image)

**Figure 4: Information creation and storage**
By using BI they can still save and organize properly all these data and so on automatically study and evaluate to obtain useful results, but also with BI tools can get that relevant information in just a few seconds saving lots of unnecessary checks and searches of irrelevant data.

Another important factor of this BI evolution has been the increasing computing speed reached in last times changing the first incredibly slow load times in to a instantly responses faster even than our thoughts which has made turn BI from a occasional consulting tool to the actually basic diary need which is for many users.

And not just the fast responses has become a decisive factor, also the easy way that this results can be spread and shared to everyone by using the actual technologies (as internet, blackberries...) has been an important fact to get the high levels reached in the use of BI.

This part will be also incomplete without the respective mention to the actual BI Suites which in contrast with the original single tools that were used in the beginning can offer a whole world of advantages.

With the actual suites not just can avoid the step to choose a provider per tool with its corresponding lose of time and resources, also provides you a single support system to which attend in case any of your tools have problems or just if want to be improved, also the fact that all the tools come from the same provider means that has been already thought about their interoperability which makes not easier but necessary and complete the perfect synchronization of all the products provided, and of course the correspondent lower prices that can offer a single provider for a suite in front of many providers for single tools.

Figure 5 shows an example of the above described BI suites.
1.3.3 Implantation risks of BI (Operation comparison)

As a technological improvement BI implies changes and not precisely soft or small ones, depending on the level of BI that want to be introduced in the company may be needed a complete restructuration of all functions in the enterprise and this is not something that can be done lightly.

If an enterprise can be compared with a human body, a BI implantation process will be as an open heart operation, something that must be done because without this change even sometimes all the functions can still working, none of them can do it properly, also it’s a delicate operation but when done satisfactory the results are always good.
If an enterprise have ‘heart problems’ probably should take some pills to mitigate the effects and here pills are the people responsible to fix all the problems that, from now on, the new ‘BI’ heart will automatically solve, this can sound drastically if we look from the side where someone it’s going to be fired, but should be seen as an enterprise improvement where a task can be done better with lower costs.

Another fact that will be considered is the reason of the heart problem, and once found should be countered, with BI this reasons can be checked and found, so if it’s a bad software should be replaced for a new better one that solves the previous problems, and if instead it’s someone’s performance which it’s making the business not go for the right way should also been solved.

And last and finishing this comparison should be said that as in any delicate operation a rehabilitation and adaptation time is needed to let all the organism adopt and adjust its functions to the new order, which means that should be seriously considered a safe time to let everyone get used to the new enterprise features.

**1.3.4 Are we improving?**

One of the typical doubts when you think about BI is the way in which you should measure if you are progressing in the right way or not.

There are so many factors to consider when you have to evaluate if your BI have been a success or has failed. Which for one person can be considered a failed implantation, for others can be a great success depending just on the measure that they take to evaluate the results.
An example is if BI is thought as a tool to increase the ROI (Return on investment) and at the end of the estimated period this hasn’t reached the expectative the BI solution can be considered as a failure, but maybe this same BI solution has provided the enterprise with much more clear reports, helped to organize in a better way all the information collected and increased the happiness of the enterprise workers by reducing their wasted time doing tasks that not correspond to them, results that even not increasing in a direct way the ROI of an enterprise can fully meet the expectative of another one.

Putting aside personal interests, are going to be shown different ways in which can be measured the success of an implementation of BI.

One of the most popular ways is to measure the business performance, once more time this can be measured in different ways, so now it’s going to be shown some of them.

- Earnings: Control the difference between earnings before and after the implantation of BI is one of the most common ways to measure the success of BI and also one of the worst and most inaccurate, because of the non direct relation between the BI implantation and the short term earnings.

- Profitability: So close to the previous one, maybe taking in account a few more factors than just money but also so inaccurate and incomplete.

- Costs: Another way to increase your profit is decreasing the cost of your services or products which will lead to an increase of potential customers, but this one more time can be also one collateral effect of a BI implantation so it’s again a good but incomplete way to measure a success.

- Growth: BI can help to get a fast development of your business helping to grow in ways like, recruited personal, internal knowledge and social publicity and recognition.
• Efficiency: Relating the force task with the results obtained it’s also a good way to measure the success of an initiative, and also can help to see the difference between the cost of an action before and after the implantation.

So after watching this can be considered that there is no correct way to evaluate if BI has improved the Business performance but maybe the solution is not to evaluate just focusing in one parameter but taking all of them in account or at least some.

As previously said this is just one way to measure the success of a BI initiative, maybe one of the most complete and accurate ones, but surely not the definitive, and also there are other ways to measure this as the ones following below.

As in the introduction example has been shown another common parameter to evaluate success it’s the ROI.

This parameter its commonly used more as a requirement before any BI project is approved and started than to measure the success once done, but how already has been approximated the enterprise impact that this project it’s going to generate, also once done can be compared with the initial expectative and try to get some conclusion. Nowadays some IT industries ensure that have found they correct way to calculate the ROI of a BI project, but many of them give different results and also this parameter it’s so related with the kind of BI that it’s going to developed so it’s so hard to give a exact generic approximation to this value. Also should be considered that a BI solution can offer many advantages that can hardly been represented in a value like ROI.

And all this leads once more to a parameter that even often is used to represent if a BI initiative has been a success or not. It’s not the best way lacking the capacity to fully evaluate the BI global effect.
As a set of tools, BI objective is being used, known, and appreciated by the users, and try to make this group as wide as possible in order to improve everyone results in one or another way, so if after a BI implantation all employees now, use and improve his performance because of this BI solution or if even just feel that this solution is helping them this can be considered as a great success in the implantation.

In this case, should be considered that maybe not all of the employees of an enterprise are potential users of BI, and this ones should not be considered in the percentage of 'non-users'.

Another grey percentage is the people who is benefiting from BI but not using it directly. This can be for example the ones who get some reports from tables already processed by BI. In the past this reports could be confusing, incomplete or inaccurate, and now from use of BI are provided in a much more better way, clear and detailed. So even this user has not used BI directly, indirectly has obtained some benefits from BI.
1.4 BI: just technology?

The answer to this question has been already solved previously, but next will be shown some other aspects that will reflex how BI can affect and should to all sorts of business functions.

1.4.1 Business-IT relationship.

There are many topics about the Business-IT relationship, but the fact is that many of them are true and can be seen daily in the majority of companies. One of the wanted side effects of BI is to develop a mutual understanding between the two sides. Important facts to achieve this goal are for example the formation of hybrid people from Business-IT able to understand and unify both sides and ideas. The creation of incentives will also motivate the union and collaboration from both sides. Hold regular meetings with both sides personnel, and promote its collaboration within one side following others decisions. Collaboration has never meant that one is above the other and here should also not be this way.

The creation of this relationship will then become in mutual improvement and understanding of the other side, helping to improve the results when collaboration between both sides are required or high degree of mutual understanding is needed to continue progressing and evolving. Figure 6 shows in a visual way the actual general relationship between Business and IT:

Figure 6: Business-IT relationship
1.4.2 BI adaptive

It’s important to know when and where should be done the BI changes, how often and by who. These are factors that can not be left to fend.

Should be carefully considered where to put every element of BI, its capacity, if it promotes reuse or if it’s flexible and adaptable to its position, while considering the risk, costs and commercial benefits.

So it’s crucial a full understanding of the scope where it will be implemented, the resources and time available, which are actually quite difficult to precisely predict from the very beginning.

Actually it’s considered a good result to deliver a solution ‘sufficient’ on time and with the original resources not widely surpassed.

Be ready for any possible change it’s another vital goal that should be achieved for any software and especially for any BI part. And a perfect control of quality and perfection can help to control and promote the well developing of these changes.

1.4.3 How to manage BI?

As there are many ways for BI to affect to an entire organization, take care of the organizational issues can improve the results obtained by a BI solution. Can be easily seen how in most of the considered BI successful implantations cases they were organized and prepared to receive the solution, and also how its evolution during the implantation process was crucial for the final success achieved.
Another important decision that should be made and followed is to decide if the BI implantation will be at departmental level or will affect the whole enterprise. Should be known that a departmental implantation will be focused on individual business, with the unit needs on the top and without caring so much about the technology used. But this will also have its inconvenient as limited success, and the need of dedicated resources.

Otherwise the enterprise implantation will care about the company needs and all the departments should follow the standards. Also the results will no be seen immediately and a will term result will be the expected here. In this case the resources needed will be shared from the different departments and a success or failure of this implementation will affect the whole company.

Should be known that a solution can be successful at departmental level, but once this success tries to reach all the company scope if its not so well planned and prepared will become a global fail with catastrophic results, this is because a limited department success can’t be easily translated to a big scope without considering all the variable factors that will affect the entire enterprise. Also the objectives from one single department are so different to the global ones followed by the entire company so use to be hard to do this kind of migrations.

Until recently the only representative of the BI was the IT responsible who often were not considered to have a seat on the important decision meetings which made that critic tools used by BI where not really considered in the decision making process. Lately this has becoming less and less common but still have many companies that not consider the CIO as a complete member of the high decision making cabinet.
A good way to deal with these problems is the creation of a BICC (Business Intelligence competency center), a team inside the organization to support and promote the good use of BI. Even this concept can sound like something new it’s something that has been always there, just with other names. The main purpose apart the already said is also to help in changes and improvements that will affect BI. It should be a permanent structure organized and formed by enterprise members that can also work on the projects and give advice.

This new department or organization should have its own resources but in the beginning can also have them shared with other departments. Its size and way to manage will depend on how big is the company, the BI implementation and many other factors depending on the company needs.

Also the BI solution should be adopted according the actual needs, otherwise a great expense on BI software that nobody can or know how to use its also pointless. And the desired result is the fact that a good BI implementation will awake the potential users interest. Sometimes the same BI implantation has become much more successful in smaller and less resourced enterprises because of the good management done by the BI responsible.
1.4.4 Tools for who?

An enterprise should always try to get the best for everyone of its employees but this is a fit that not always can be reached, sometimes a bunch of workers will still unhappy with some decisions made, or in this case with some new solution acquired.

To decide make use of one BI solution, first one this should be approved by consensus of the main groups and never, should the choice made, let anyone feel fear, doubt or insecurity about the upcoming changes.

About the different tools, there are different types for different users. Tools with interface will awake the commercial user interests. Commercial people like user-friendly tools, visual and easy to use. But also everyone knows that not just the presentation layer it’s important. If the basics are wrong, then nothing good will come from there. A good architecture and quality information are also basic parameters to consider about IT tools.

As well as a commercial user by itself can not choose a BI tool because of his lack of technical knowledge will be also an error let the IT team decide which tool acquire or not depending on its technical parameters. Because the final user its not just going to be technical staff so a collaboration between the involved departments will be the best in the BI solution selection process.

Another fact to consider is if get a standardized tool or a customized one, the first will be cheaper and faster to deploy but also will be less personalized and adapted to one’s business. Also the process of choosing the right tool should take longer to be a good process. Various providers should be compared and studied ones benefits against others and all the possible disadvantages that will behave its use.
The choice of an integrated compound of tools (suite) is also a good idea for those who are thinking in acquire a package of different tools and will not have to worry about compatibility between ones and others and posterior spread maintenance. Also this suites are also prepared to work with the other tools so a better performance will be reached in less time and resources spent.

It’s important to know too that not everyone needs to use the same tools. Inside one company there are also different groups of users with different needs and purposes. Also there is a big different between the users that will generate or produce information and the ones who will use and treat this information to get results.

Also different tools will provide different results, so with its use can be achieved strategic goals for long period plans, just midterm actions with some tactical plans, or even operative results for the more short time actions.

The restriction of some information to certain users should be seen not as a restriction in his authority but as a way to clear its results from abundant useless results that will just harm its perspective. This restriction can be done depending on different factors as department, range or actual mission.

Once one tool is selected and its user also defined, this one should understand the whole range of functionalities and capabilities of this tool in order to be able to express its full potential and make the best possible use of its new capabilities.

One last detail added just to be fair with the new technologies is the fact that actually there are many new tools specifically designed for mobile devices as blackberries, new generation phones, tablet and similar devices, and these technologies can be perfectly combined to even increase the capability of give real time results when this results can be checked everywhere and every time.
1.4.5 How to keep everything under control?

It’s a proved fact that controls the totality of the business scope in all the possible ways it’s something impossible to achieve. But always there’s something to do about it.

The first thing is not let anything that can be fixed, controlled or predicted to fend. Always will be factors that cannot be controlled but all the others should be as under control as it’s possible.

If our enterprise get some unexpected good results will be excellent, but if some bad and unexpected results come also a countermeasure should be prepared to take action. If there are local or global agents that will externally affect our performance have them as predicted as possible will be the right way, if there is competitors that can jeopardize the current planning also should be considered prepare some countermeasures. And this somehow it’s also a good reason to make our own planning be always in the forefront of the market.

Take all the chances that will appear it’s also a good way to stay on top and achieve excellence. Which will make everything goes smoothly.

Another key factor for successful performance is to create an enterprise culture. BI should not be just a bunch of tools but a way to proceed and to things right. Decisions should not be made because of hunches or superstitions but based on proved results and certain facts. New tools should not be rejected just because the present ones are good enough, improvement should always be a goal and IT it’s usually capable to offer it.
Think that a tool, process or some IT feature will do all the work is the wrong way, people should always give its formed opinion and add light to dark areas with its experiences and best practices. As sometimes happens in “medical emergencies”, some decisions should be made believing in intuition, in this cases the information used should be the most objective possible and once by the technological side it’s all done, the human side is the one which should take the last decision.

1.4.6 Where goes the future of BI?

The future of BI as all the futures is kind of uncertain but there are some trends that show us where should be BI in a not long future.

The first steps will be take BI out of the limits of the enterprise, think about the customer relationship management (CRM) or supplier relationship management (SRM) it’s actually a reality that most probably will be enhanced by some BI features and become part of it.

Future is not just better BI solutions, also better people using it, better enterprise culture, unified and standardized processes and every single field that can be expected to be improved out of BI but that will also cooperate to achieve a major goal.

The use of BI expects to be increased from the actual global 25% to at least 50% of the potential users, and become a common use tool. BI will no longer be the new technology that just a few know how to use and all the others watch from outside as a strange object. It will become part of the everyday and its use will not any longer be restricted to a few selected ones.
There are also four features that seem to be the next step when about BI talking; these are the analytic predictive tools which will be the future of the prediction software. The inclusions of text analysis providing the capability of realize searches (like Google) on our own data.

The advanced graphic support will improve the actual graphic tools with improved features and the last one will be the possibility of obtain better reports with the new improved reporting tools.
1.5 What it’s needed?

1.5.1 Getting the information

Talk about the core of BI means discuss about the technological elements that constitute and make work an enterprise.

If someone want to talk about BI first must know which the components that conform it are. So in the next pages it’s going to be explained which are this components how they work and are related with each other and how can they fit any enterprise.

It’s an obligation when talking about BI components start from the core, from the beginning of the cycle, and this in BI use to be the operational system, and lately has been more and more common use ERP (enterprise resource planning) as this core. We can see an example of ERP on Figure 7

Figure 7: ERP diagram

And as can be found in Wikipedia :
An Enterprise Resource Planning (ERP) system is an integrated computer-based application used to manage internal and external resources, including tangible assets, financial resources, materials, and human resources. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. Built on a centralized database and normally utilizing a common computing platform, ERP systems consolidate all business operations into a uniform and enterprise-wide system environment.

Wikipedia (Ref 3)

From the previous description can be extracted some valuable information, can be seen that data from all resources it’s going to be gathered and saved, data that can be used by BI to get useful results. This ERP tools have so many shapes and different functions depending on uncountable factors but it’s a proved fact that all of them help to get more and better information which is a critical factor in BI, also this information its treated in better ways obtaining much more valuable information from the same sources than without using these technologies.

But should not be forgotten that the above mentioned ERP systems are just the starting point for a good BI, to get all sorts of information in the better way and be able to access to the quality information and work on that..It’s also important to see this in the other way, in case that our ERP not works properly and gets the information in the wrong way, or any of its steps have a defect, that can leads to a failed BI deployment since it’s wrong from the very beginning and it’s going to be hard to fix these root problems or at least to get the good results that should be expected.

Until this point it’s easy to think that the only resource from where to get information are the above mentioned ERP but that’s not even close to the reality. In fact ERP are just one kind of tools that can be used for BI purposes but there are so many other sources from where retrieve information.
Some of the clients can give reports that can provide very useful feedback, also the suppliers or anyone related with the business. Important information can also be retrieved indirectly as a result of some random survey to potential customers, or by checking the statics of a webpage with related products or similar enterprises.

Also and closing this section, it’s important to consider where the direct competition is heading and which tactics and strategies are using in order to use they acquired knowledge and use it in our own benefit.

1.5.2 Saving the information

Once the information has been gathered another critical point is the one where it has to been stored.

In the past nobody cares so much about these information organization and just store it in any kind of HD that can save all the information collected, but actually this information it’s the raw material for posterior investigations, it will be accessed, consulted, treated, related and many other operations will be conducted on it so it’s vital to have it well organized and easily accessible.

To accomplish with this task over time the storing capacities and tools has been improving and improving until reach the actual situation which can organize huge information systems providing fast and reliable responses.

And for BI the most used and frequently necessary component that can provide this is the Data Warehouse
The easiest way to describe a data warehouse is as simple as ‘a database used for reporting’ of course this definition lacks of a complete and accurate definition but it’s a good approximation for the ones who just want to know the basic concepts.

In a little bit more deeper explanation a data warehouse can also be described as the place where all the information gathered from all the different operational systems it’s saved in a more consistent way and loaded to be ready to use any moment by the diverse needs of analysis that can appear.

Entering a little bit more in the technical description of a data warehouse just have to be said that this ones are ‘made of’ relational tables, tables from a relational database. And that these ones can be organized in many ways depending on the business needs and the way that these tables are going to be used.

Closing this section it’s interesting to talk a little bit about the ‘metadata’. Talk about metadata means talk about information about the information.

This strange concept refers to that information which helps to catalogue, classify, find or store the information in the right place and in the right way.

It’s much easier to understand this concept using the next simple example:

When someone goes to a library and it’s looking for one book, it’s going to be much more easier to find this book if know the publication year, also if have information about the author, the title, or maybe just know the field related to that book like science book, mathematics…, and all this information saved about the book it’s the metadata, which is not the book content but it’s in some way related to it.
In the current case this metadata can be when and from where the information was created, by whom, why or add any sort of details. So if in future any tool need to get information about one process, one customer o about a certain period of time it's going to be much more easily get all the related information thanks to this metadata.

### 1.5.3 Using the information

The last that will be needed to finish the implementation of a BI system will be the tools that will use this information previously retrieved and stored in order to take some profit or advantage from its use. There are lots of these tools, and some are going to be detailed in the next chapter but what we should previously know is that these tools are the final objective of the BI implementation, where the results will be achieved, the variety of finalities goes from simple reports, to more complex analysis to even be able to receive advice from these systems on future decisions.

And should be known also that the results achieved cannot be just measured in a quantitative way, also these results can also be expressed as the degree of happiness of employees, decreased inter-departmental disputes, improved access to information, reduced waiting times and all sorts of improvements hardly quantifiable..

On the next chapter can be seen examples of written results as the results of the reporting tools, some graphics as result of some scoreboards or some of the hardly quantifiable as a result of a dashboard that helps in the decision making process.
1.5.4 About ETL (Extraction Transformation Loading)

Frequently when talking about BI it’s common to hear about using the information gathered from the operational systems, but this information cannot be treated in the shape that its collected and also not all the information should be always saved or considered relevant, and that’s why exist the ETL process.

The ETL process can be explained in three steps, the first one is the extraction step, here should be gathered all the information from the operational systems, the outside sources and all the archives which are going to become the base for our future Data Warehouse (The concept of Data Warehouse and all its details has been explained just a few lines above.)

The second one used to be transformation but recently it’s also common that this one and the next have switched places to become ELT. Anyway now it’s going to be introduced this one as the second step in this process.

This is the one which consumes more time because use to perform many actions as clean, filter, validate and apply the needed rules in order to transform data into information that fit the operational needs. And sometimes this is a hard process due to different source systems with various input modes, some inconsistent or incomplete data inserted by users or just the different definitions of the same concepts.

And the last step but not less important it’s the loading step which as its name shows it’s the fact of loading all the information retrieved and transformed before into the data warehouse or to the destination place.

After this introduction someone can think that these steps are useless, that with today’s resources all the information can be saved without this process, but that’s a big error.
Actually not all the information is useful, and the cost of saving everything not just affect the spatial limitations, also when this information will be consulted or treated to obtain other results it’s going to increase all the computation costs and sometimes can affect adversely to achieve the optimal results or can be the reason of an unfaithful representation of the real scene.
2 PART: TOOLS
In this second chapter will be introduced the most common tools used in BI. Because of the previous chapters should be already clear what it’s BI, what the goals that this field follows are, and the components that we need to be able to use it.

Now it’s time to introduce the final objects, the result of introducing and preparing an enterprise for a BI solution, the tools.

With this objects BI will get his results and achieve the goal that made all the business start thinking about BI. Of course every tool can have a different goal and a BI solution do not have to be restricted to just one tool, in fact the common scenario it’s the implementation of many of these tools at same time and even the providers of this kind of technology offer suites solutions that already include different modules covering different fields of BI.

Actually there are lots of tools that affect many different areas, next will be shown the most common and extended ones, but should not be forgotten that this is a fast growing technology that everyday grow with new applications, updates and reviews of an already huge catalog of products and services.

In order to get a closer approach to this tools first will be introduced the generic information about the tool and then will be presented some real in-market tools in order to get a more realistic idea of what these tools are and how they work.
2.1 Reporting tools

The first one may seem that not fit perfectly the definition of tool, as long as the reports has been present in the business world since so long before even the word BI was defined, but what BI can offer is not just a simple report with the description of a circumstance or a fact, is also everything that surrounds it. The way in which this information is introduced and saved, the place, all the data or information that should include, the prerequisites that must accomplish and every single detail that should be considered.

Who will access to this data, how often, searching what, with which criteria are other useful factors that can help to define the final structure that one report should acquire.

Additionally nowadays it’s becoming more and more common find attached or in the middle of this reports additional information like pictures, footnotes, charts, tables and all kinds of supporting material that can help to improve the general performance of many processes. An example of this can be shown in next image, Figure 8

![Canadian Unemployment Data](image_url)

**Figure 8: Canadian unemployment data**
That’s what makes difference, the fact of have everything well defined and clearly standardized in order to make every single related process much more fluent and smooth.

Current evidence of the use of these technologies can be found in the termed “Enterprise reporting” which by the use of logical models and using the information previously gathered from different sources in the enterprise can generate human readable reports that can generate an additional value to information useless until now.

Next are going to be shown some examples of these tools:

2.1.1 IBM Cognos Business Intelligence.

As its name indicates this tool (it’s a complete BI suite) comes hand in hand with IBM which means that back there are lots of professionals of IT fields supporting this tool and making of it a serious candidate to consider when talking about BI, but just focusing on his reporting capabilities what can be said?

This tool ensures that can you can obtain any type of report, which provides a comprehensive set of reporting capabilities and convenient access to all the information required in an easy fast way.

By the use of this tool the dependence on the support IT team will decrease making every single user more independent and optimizing his performance.
Once one report has been published can be accessed via multiple systems, viewed using many formats in numerous languages and from many places, improving his outreach to new limits. Next it’s shown an example in Figure 9

![Figure 9: Report exported to Microsoft Excel](image)

Also it’s a hybrid tool used by IT personal and Business personal at same time improving the relationship and confidence between both departments and facilitating the sharing of files.

Other interesting features about this tool are the easy use of it that let create reports just by drag and dropping, use templates to speed the most common and standard processes or the interactivity of the created reports, which offers many options like calculations and analysis features that can be executed on.

Also can be aligned in order to optimize the business performance adding other special options like mobile access for phones, palms and other mobile devices as can be seen in Figure 10.

![Figure 10: Cognos for mobile devices](image)
Other options are get integrated with already existent applications allowing users to improve without an abrupt change, get real-time information to control every single detail in the most changing areas and have a complete access to data wherever it resides, with flexible data sourcing.

Optional capabilities are also available for this tool and include a wide range of areas, from new tutorial ways using real monitoring of other sources and products, through integration with others IBM software in order to enhance the capabilities and results of reporting to upgrades or improvements of the basic tool packet.

Should be known that Cognos was initially an independent BI software company that was been acquired by IBM increasing his possibilities and reinforcing his base but maintaining the benefits of the specialization acquired by a field focused company.

The last thing that should be said it’s that this is not a free software, an Authorized User License can be bought for 1 year period acquiring the software and support for $180 approx.

For more information on this software please refer to Link 1 (on Links Annex)

Additionally a demonstration of this tool can be downloaded from the link2.
2.1.2 MicroStrategy Reporting Suite

This is a very versatile tool that can provide almost all the features that can be required to a reporting tool.

Its powerful enough to work with detailed graphs and offer many possibilities to perform on them, and also helps to organize all the data in a useful variety of ways.

This tool also counts with predictive features to perform forecasting, and can detect patterns providing in this way a complete predictive analysis.

Another interesting feature is the enhanced exporting and importing capabilities. Respecting these areas the software can import from Oracle Weblogic, SAP Netweaver, IBM Websphere and Microsoft Sharepoint, and once finished can export to Excel format, PDF and even HTML. Figure 11 Shows some basic functions of this tool.

![MicroStrategy Reporting Suite](image)

Figure 11: MicroStrategy Reporting Suite
But if the above properties are not enough the great advantage of using this software is undoubtedly the extensive possibilities of support offered. A wide group of qualified technicians are always available to solve any problem or answer any question, via email, chat, forums or with the wide detailed documentation easily findable around the web and related web-pages.

This is a good solution for everyone who wants to implement a reporting tool on his business and doesn’t know how and where to start, and it becomes really interesting when that is free comes to light. Which is an interesting point when the fact of invest on a report solution have to fight with the economic advisors or when really is not clear if this way it’s the best for the enterprise and are not willing to take risks.

To get more information there are many sources from where get more detailed specifications starting from his own webpage, and from where also can be downloaded the complete software completely free.

Figure 12: MicroStrategy free trial CD.

The corresponding link can be found as Link 3 on the Links Annex.
2.1.3 JasperSoft: The World’s Most Widely Used Business Intelligence Software

As its name shows this is actually one of the first candidates when somebody thinks about BI. In the last four years has been awarded with many prizes in BI field including in 2010:

- Business Intelligence ISV solution at the European IT Excellence Awards 2010
- Intelligent Enterprise Editor’s Choice Award for Business Intelligence company to watch in 2010

As it’s proved this is a recognized company which offers excellence in its products and tested quality based on experience and hard work. But what can be found on its products?

JasperReports Library it’s the name given to the self called next generation reporting tools. This its our embeddable Java reporting library specially designed for and to developers.

With its use can be ensured take the maximum profit and advantage from the use of Java and can offer many advantageous features. Below are going to be shown some of them.
One of the basic advantages of using this tool is the wide acceptance of input sources such as JDBC, XML, POJO, EJB, MDX, CSV and others less common or customized ones. Also his many different output ways (HTML, PDF, XLS, RTF, SWF, ODF or TXT).

Other basic features include the interactive and animated reports for a faster and clearer comprehension, the capability to obtain reports from other reports or the various viewing modes such as maps, tables, charts, barcodes, and many more.

One of the highlights of this software is their interface ‘iReport’ , this is a report designer specifically created to give total control to the user over its reports providing completely freedom to create any kind of needed report in the most accurate, correct and simple way. We can see an example of its interface on next Figure 13

![JasperReports Interface](image)

Figure 13: JasperReports Interface

Other interesting features are the modern visualization ways that this software offers to the user as the next ones.
The possibility of geo-visualization of its reports which can provide a fast understandable report in a few seconds showing where is located our problematic areas, which are the areas with the best results or which ones will need more attention. Figure 14

The new animated and interactive flash widgets can help also to improve the capabilities of representation in an easy fast way. Figure 14

And finally the flash charts which say to provide a simple an elegant presentation of the data reported. This graphic and the previous ones can be found in the next Figure 14

![Visualization examples of JasperReports](image-url)
Finally, as enterprise dedicated to BI its products are not free. The prices are variable and may vary. A JasperReports Professional License can be acquired for 249$ approx, or the services of its Reporting server can be acquired starting from 9$, but if still not sure about the services and products always can get a 30days trial completely for free to be sure that this its the best tool for everyone’s purposes.

For major information on this product or a free demo software link 4 can be accessed.
2.2 (Digital) Dashboards

Dashboards are tools that provide information to manage organizations more effectively.

Its main objective is to help in the decision-making process, giving support information and providing an easy way to access, evaluate and visualize all the relevant information. Because of the last sentence BI Dashboards use to be called a new form of ‘Decision Support Systems’.

As an information system should be emphasized its graphical displays and accessible interfaces easy to read and use. And as a decision support system, should be ready to make fast decisions with the available information in management, operational or planning fields.

Should be clear too that a Dashboard it’s not a Scorecard, these ones pursue a different goal and are different tools that shall not be confused, but usually are. Scorecards will be detailed in the next section.

Dashboards can be acquired as ‘stand alone’ software, in this case, can be installed and run in a single computer and by itself will obtain the necessary information from the operative system and all the applications that can provide valuable information to generate its results.

The other way is acquiring it with a complete solution, or gets it alone, but integrates it in an existent solution, this will provide great advantages since can use all the information carefully processed by other system elements.
Many benefits come from using digital dashboards, by using them the managers and responsible of an enterprise can evaluate how well are things going if the results are the expected, how are things in one concrete moment/area or just to check and control the general departments performance.

There are many parameters to visualize on dashboards, but there are some that use to be the common ones and can be found in almost all dashboards, next are going to be somewhat detailed.

The basic parameters that use to be shown are the ones who let foretell the next/new trends in order to be prepared for what its coming and get a competitive advantage from using this information in the right way.

Also about the trends, the negative ones can be identified located and erased or fixed in order to improve the general performance.

If there is any inefficiency will be detected and by following the parameters or procedures adopted in the more efficient areas will be improved to solve the problem.

Obviously all this will be presented in a easy understanding way and most of the times in a dynamic presentation where some parameters can be modified in order to guess what will happen in case that some changes will be applied to the actual parameters.

Also by forecasting and better understanding the actual situation it make easier to align the tactical and strategic goals improving the middle and long term results.

And by having all the results in a graphical way can also save lots of time studying reports and trying to extract something useful, which means again save of time and efforts for the decision makers.
With all this benefits it’s obvious that anyone who knows how to use this tools will get an improvement on his performance with a significant gain on his results.

Before start with the real in-market dashboard tools just one final clarification, sometimes a dashboard will get some field name before it as ‘performance dashboard’ ‘executive dashboard’ or ‘business dashboard’ among others, this will just represent that this dashboard has been created or can be specifically used to give support to this field but actually its function and goals are the same for all of them and are the above explained so itself they are a same tool that may have slight differences.

"The consolidation of the business intelligence industry only increases the importance of dashboards for the enterprise"

Lyndsay Wise(Ref 4)

2.2.1 Dundas: Data Visualization

This is a company created just thinking about dashboards, awarded by industry experts and focused on meeting all the needs of dashboard customers.
His main purpose is to give the needed information in a visually effective way. Which means provide the user with the information required on a fast easy and useful graphic way.

Since it’s a company created specifically to pursue the creation of digital dashboards has focused a lot on special and differential features that will provide an advantage over other competitors.

Also proclaims that his platform can be extended to meet all the needs of customers, even those most demanding.

First should be analyzed the possibilities that this platform can offer to any customer about visualization, and the main advantages that can provide are the next ones.

**Rich interactive data visualizations**

As a digital dashboard of last generation can be found a wide variety of customizable visualization to treat all the information efficiently and obtain just the desired results in a easy understanding graphic.

**Unified presentation of corporate data**

Regardless of where is the data, what kind of, or how is stored, all the data will be centralized and harmonized to be presented complete and accurate.
Bridge the gap between IT and business users.

Some dashboard projects may need intervention of both business analyst and software developers. First ones may not always understand some technical terms and developers may also not fully have a business perspective.

By using Dundas platform IT staff and business users will be granted with enough tools to be more effective and all in a easy way regardless of independent skills. This decoupling will simplify IT job, give independence to business staff and grant that everyone its independent and productive at same time.

Independent BI users

Allow end users to create dashboards easily reducing its learning curve and providing more efficiency and productivity because of how they use their own created tools with personalized parameters

Fast dashboard development

By reducing unnecessary transactions, slow dependences and adding easy developing ways, anyone can rapidly create a complete dashboard in time and cost-effectively.
Quick-Easy integration

Easy web-deployment and system integration ensures an easy fast integration of dashboards on any system.

After this overview it’s easy to get a global vision of what this product is and many of its advantages, but: Which are the so called unique and special characteristics that differentiate it from other tools?

There are many features that can be found on Dundas dashboards and will help us to improve our business performance, easy drag and drop designer web based will help to create dashboards just dragging the elements needed in a really intuitive and functional way. All the data can be easily configured to be displayed in different manner and completely personalized.

Modifications can be made from just adding simple alerts to complete personalizing using own developed scripts. Counts also with a proper API to help in bigger additions and can be easily integrated in web applications.

Wide support for numerous data sources, from SQL servers, through MS OLAP EXCEL, SAP and many others.

Easy sharing are also valuable features that shall be considered, helping to eliminate unnecessary connections collecting all the information needed in one common point and available to be shared, modified or commented in order to improve all the relationships and sharing needs.

And last its professional support system, made up of experienced staff highly qualified, and also the very useful tutorials available that will complete a set to not let you feel aimlessly.
With these features this solution can be rated as one of the best options now in market but should be remembered that this is a dedicated enterprise so its products are not free, and depending of the enterprise needs may vary.

If still have doubts about this product or any of its features always can be downloaded a free trial from its webpage or see any of its many demos on-line available also in its webpage which can be accessed from Link 5

On figure14 can be seen two examples of Dundas dashboards.

![Figure 14: Dundas Dashboards](image-url)
2.2.2 Corda: Data Visualization Software

Since 1996 Corda Technologies, Inc. has been working on visualization software like dashboard solutions. This experience has made them became a leading choice for professionals looking for data visualization solutions. Its offer includes fast, adaptable and pioneer dashboard software.

Already recognized by IT experts and with a spotless reputation, let's introduce Corda’s CenterView, its dashboard star.

Corda CenterView is a tool to visualize data in the most meaningful way and helps to get a fast decision-making process and take corresponding actions. It provides an organization with control of its own performance by using its complete dashboards. This tool also can achieve fast results and reward the customer with early ROI.

Its main flags are four, the first one takes the name of ‘Powerful Enterprise Platform’ and inside resides the property of get information of many sources at the same time, coming from different origins (Relational Databases, Excel, OLTP …). Also affirm that the information can be seen since high-levels and quickly drill down to see the most deeply detailed measures that want to be checked, comes with the promise of a rapid simple but effective development, and with a complete list of systems(almost all) from where this data can be viewed, as long as they have web browser, including mobile devices...
The second point is called ‘Take Action’ here is presented the property of access to the original data sources from the dashboard, a complete modern dynamic visualizations interface with programmable alerts and notifications, and easy collaboration tools.

The third one is simple and direct ‘Expose Trends’ and with this words comes a group of functions that lets you control trends, even when in other cases its quite difficult to have a global idea of where your business is heading, CenterView allows you to take ‘snapshots’ in order to not lose even one single detail about where are things going.

And the last one it’s called ‘Visualize Your Data in Your Environment' which refers to the easy integration of CenterView with your existing portals or web applications.

Figure 15: some graph types from Corda gallery
After this declaration of intent, there are some features that shall be commented.

Its performance dashboards make finding the right information something simple and intuitive, and its development has been improving year after year to the point of developing with elegance in many standards such as J2EE, .NET, XML, Web services and the always present JAVA.

CenterView ensures a secure access from everywhere with a sign-on access and complete availability of its dashboards. Can also be easily customized and delivered to anyone who may need it and give it the right format adding integration with Microsoft Power Point and Excel as well as saving options related with PDF formats among others.

With its prototyping and cloning capabilities presents a wide variety of pre-customized dashboards that will help in the fast creation process and to get a professional standardized model.

As new features included in last versions can be found support to mobile users allowing to create and deploy performance indicators to mobile devices, including the last ones released in market as iPhones, iPads and many Blackberry models.

Improved connectors to connect previously reported data to CenterView dashboards and allowance to connect also some dedicated web services to our dashboards.

Improvements on its wiki accessible through Link 6 to access tutorials and documentation updates.

On next page’s Figure 16 are shown some dashboard models related with different areas.
Figure 16: Digital dashboards by fields
After 9 years winning industry related awards, 1400 of customers proving its high-quality solutions and with thousands of successful deployments all around the world there is not much left to say about its services.

For more information about Corda Digital Dashboards can be accessed to its main webpage through Link 7

If after check all the information and demos still need more details, a 30 day trial can be downloaded completely for free from Link 8

“Success is knowing!”

2.2.3 Klipfolio,Inc.

Describes itself as an organization that helps enterprises to align priority with activity.

It’s known to help Fortune 1000 enterprises to increase its performance and profitability by adding business visibility helping to get more informed, faster and precise decisions.
Why enterprises choose Klipfolio? There are five basic reasons to trust on their services.

As long as one of the main goals of many enterprises is to improve its data visibility, and Klipfolio ensures a considerable improvement on this field, should be considered as one of the first investment candidates.

Information on time means success, with Klipfolio nothing will escape from your control with its real-time notifications.

Easy use and understanding of Klipfolio’s software promotes its use among everyone reaching unity and acceptance from users.

Clear and unique results even when the information comes from different sources to provide a concise help to take better decisions.

Global support from world’s most successful companies with proved results and success stories. Klipfolio is one of the most intriguing information delivery systems we’ve seen for a while ... it could well be the corporate information delivery vehicle you've been looking for.”

Mark Gibbs (ref 5)

How can these previous affirmations be transformed to features?

Data visibility: Expose just what you want to see, personalized choice of parameters in screen, all data exposed on desktop in order to make inescapable from your eyes what really matters.

Figure 17 shows an example of this feature.
All presented in dynamic and sophisticated shape easy to understand and work with it. All in a real-time detail to not let you miss even the last events and also with periodic (programmable) reports for better illustration and global performance view.

"During a hectic day, just needing to log in again or launch a browser is enough to stop you from looking at your web metrics as often as you should. But placing your metrics right in front of you, makes them impossible to ignore."

Oliver Novak (Ref 6)

Real time notifications: Informed responses for fast actions. All enterprise has uncountable variables that cannot be controlled but once something occurs change according to it should be taken as fast as possible.
When specific events or performance thresholds occur notifications will be sent allowing you to be the first one to know about important changes. See an example on Figure 18

![Figure 18: Real time notifications](image)

Operational Performance: Get all the information you need wherever you are with the streaming capabilities of Klipfolio. Control every move on your business performance and personalize every metric according to the team members needs.

Application adoption: If there are no strings attached to the information, if can be obtained just what really it’s required and in a simple way everyone will be glad to use and adopt any new system to improve.

Clear and unique results: Reports from different systems to one place, even in times when the information of a company its spread across different systems, with Klipfolio will be just one meeting point: your desktop, creating an easy accessible and always defined point where to refer to get any data or result.
Sales forces automation: It’s a common known fact that sales people do not use to be so interested in all this kind of software and tools, but with Klipfolio you will give your sales people the data they want where they will see it making it obviously useful to them and avoiding difficult processes that will not follow. An example is shown in Figure 19

![Figure 19: Easy accessible data though desktop allocation](image)

For more information about this software can access to its webpage referred in Link 9

Also a free trial can be downloaded from Link 10 and a White paper of Klipfolio about operational BI can be accessed from Link 11

“Placing your metrics in front of you makes them impossible to ignore”
2.2.4 Roambi, GeckoBoard and InDinero

There are many solutions that can provide dashboards to your business and that is why everyday new ones appear offering new unique and exclusive features, here are presented the variations of dashboard tools that can be found nowadays in market.

Roambi is small tool that uses already existing business intelligence data to turn it into digital dashboards for easy reading on mobile devices. Can accept many sources and turn them in manageable graphs. The lite version its on of its star features and its oriented to serve iPhone and iPad users allowing them to access dynamic and usable information anytime anywhere. An example of lite feature can be seen on Figure 20.

![Figure 20: Roambi running on iphone and Ipad.](image)

For more information about Roambi refer to Link 12
Geckoboard is a browser based digital dashboard that helps you to control business performance in an original way, using “widgets” that will tell you every moment and everywhere (online service) how is going your business performance.

Also allows you to integrate your own communities as Facebook or Twitter and supports many other web application widgets in order to enrich your application.

Has a full API available to let the users with basic programming notions to improve its software and personalize it.

With its modern design and detailed implementation makes easy and interesting to introduce new widgets to your dashboard. Figure 21 shows an example of the basic interface.

![Figure 21: Basic GeckoBoard interface](image)

For more details you can view their website by following Link 13.
InDinero it’s a real-time financial dashboard for businesses, which means that it’s a dashboard specialized on financial branch of businesses.

This is an example of dashboard specialization which means that the solution reduces its potential market but wins in specialization, detail and knowledge on its field making it a good option when any enterprise want to improve its performance in a concrete area.

This solution centered on finances lets the customer monitor the financial health of its business all the time and automating it in order to reduce time and costs in maintenance and also decreasing its error probability rate.

Took us less than a minute to sign up for inDinero, and I no longer have to keep an excel spreadsheet anymore. Thanks, inDinero!

Joe Fahrner (ref 7)

Figure 22 Shows a dashboard example of inDinero

Figure 22: inDinero Dashboard
"InDinero offers entrepreneurs a refreshingly simple product that makes it easy to monitor their financial health"

Greg Lynn (Ref 8)

More information and a free 30 day trial can be accessed from Link 14

2.2.5 Recommended lectures on Dashboards

The following are some interesting lectures that will help to better understand dashboards, get a deeper approach and learn new and advanced concepts that will help to assist in dashboard deployments to become success histories.

**Business Dashboards: A Visual Catalog for Design and Deployment.**

Nils H. Rasmussen (Author), Manish Bansal (Author), Claire Y. Chen (Author)

**Excel Dashboards and Reports**

Michael Alexander (Author), John Walkenbach (Author)

Stephen Few (Author)

Enterprise Dashboards: Design and Best Practices for IT

Shadan Malik (Author)

Performance Dashboards: Measuring, Monitoring, and Managing Your Business

Wayne W. Eckerson (Author)
2.3 (Balanced) Scorecards

A Balanced Scorecard (BSC) it’s a planning and management tool to help and control business activities to achieve their goals.

It’s commonly used by managers and decision-making people to keep track on business performance.

Used properly can align business activities with organization’s vision and strategy, improve relationships and monitor organization performance against strategic goals.

The main objective of the balanced scorecard can be described as the presentation of results compared to a ‘target’ value within a single concise report.

Its purpose is not meant to be a replacement for reports, but use them to capture the most relevant information and according to it, design and choose the best measures and targets to achieve in order to align business performance with the current strategy.

Actually it has evolved until it’s not anymore just a simple measurement of business results, now it’s a complete suite that lets plan and manage an advanced strategy for companies.

The initial idea of balanced scorecard comes from Drs. Robert Kaplan (Harvard Business School) and David Norton. For them the balanced scorecard suggests that we should think in our organization from four perspectives and develop metrics, collect data and analyze it relatively to each of these perspectives. Next will be shown the original perspectives initially defined:
The Learning & Growth Perspective: In this perspective should be considered all the facts related with employee training, corporate culture, learning and communication in order to get a global vision and decide how continue growing and do it in the right way. Solid corporate basis from where build the future are the starting point of future success.

The Business Process Perspective: Its main goal is to know what makes different our products/services from others and search excellence in one owns advantages.

To follow this goal should be known how well business is going, what are their strengths and be able to measure it. And this should be done by someone that understands every single detail of each process so it’s highly recommendable treats this point with personnel from inside the company.

The customer perspective: Customers are one of the bases in every business and as such should be considered make some efforts to maintain a healthy solid base. By studying, select and classify the customers, an improvement on its treatment and relationships can be achieved maintaining them satisfied and loyal and ensuring a good future perspective.

The financial perspective: It’s a common fact to consider finances as the business central point, but this is an error. Of course financial data should not be neglected but also not overrated. Actually any enterprise have more than enough ways to handle and process financial data and adding more details can be sometimes as complicated as harmful. For this reason the financial perspective not will just take care that the financial measures are the right ones, also that the global business perspective is equilibrated.

In Figure 23 can be seen how vision and strategy can affect the different areas of a business.
Figure 23: Vision and Strategy
2.3.1 Corporater Balanced Scorecard Software

Corporater Company is world’s leading provider of Enterprise Performance Management software; its main goal is provide on-demand management solutions to control strategy execution and company’s performance.

What makes them different from other solutions?

Control over business

Its solutions are completely under corporate users control, by providing them the power of manages and configure its own solutions they can have everything under control. In this way the focus can be on how the organization its going, how to manage it and how to control it and not anymore be always depending on what technology can let me do.

Global alignment

Strategy as starting point. If strategy is taken as the base of corporate performance management, becomes easier to align all the practices and make everything purse a common goal.
By choosing Corporater, also is chosen a performance management partner, a very special one, with experienced software management specialists and with years of experiences with satisfied customers that will help to get all what needed to achieve success.

Corporater Balanced Scorecard Software.

With the sentence ‘Strategy is the heart of performance management’ can be described the main goal of this software. Organize the enterprise performance to align vision, strategy and business functions and obtain real results.

With Balanced Scorecards the goal of obtain fluent communication easily understandable it’s a fact. And can be done in a wide variety of ways like using perspectives, strategy maps, strategic objectives, KPI’s …

Also with Corporater software there are new ways to reach these goals by using new innovative structures, such as Balanced Scorecard Strategy Map.
Corporater includes too everything needed to measure and manage performance, in order to help in the decision-making process giving data support, tracking key performance indicators, responding proactively to potential issues and analyzing market trends.

Finally should be said too that it’s a fantastic tool to communicate and translate strategy across all the organization, with transparency, and helping to align business functions and activities with enterprise’s overall strategy.

Next in Figures 24 and 25 are shown two examples of Corporater Business Scorecards

![Figure 24: Corporater Business Scorecard I]
To get more information about Corporater Business Scorecards can go to Link 15 from where also can access to a demo of this product.

2.3.2 Strategy Map Balanced Scorecard

Defined itself as ‘The world’s most popular and widely used Strategy Map driven KPI Software’, this software establish its bases with Kaplan & Norton designed system. Additionally offers a wide range of features that can be added to the basic model in order to fit any business requirement.
Since every organization is different every strategic plan should also be. With this system all terms can be redefined to fit the organization needs and users can define its own columns and fields as necessary making of this software a flexible and adaptable tool.

Freedom to select your own initiatives and how to measure it its granted by the numerous options providing users with many useful, convenient and practical configuration and creation functions.

Complete control over planning schemes with diverse display options like Gantt or custom Grids, all with full personalization options and support tools to adapt it to the current needs.

A diagram of this Third generation BSC can be seen on Figure 26.
About the Balanced Scorecard features:

Complete control over columns display and listed items permitting add, change, delete, hide and operate among many other options to show just the required information. On Figure 27 can be seen an example of adding an Initiative row.

Easy understanding display using node trees with all the relationships and organization’s structure clearly defined and accessible. Adding also the possibility to filter by these nodes and operate on them.

Restriction policy adapted to reach everyone that may need this information making simple its access.

Different ways of preview and various formats and saving options as well as easy importing from CSV files.

In Figure 28 can be seen both single grid display and three grid display.
Figure 28: single grid display and three grid display
There are also some factors not mentioned yet that are also important for a better understanding of this system.

First the clear definition for the three fundamental strategic zones, which are meticulously studied, understood and defined to have a solid basis, these are: Strategic statements, Strategic intent and Strategic alignment using derived KPI’s.

Second the high popularity of this software, because of its unique properties: based in new technologies, fast, light, easy, adaptable, inexpensive, standardized and adaptable, has made it win a place in many enterprises around the entire world.

And last the differentiation factor that this is not high-cost huge software with loads of requirements hard and long adaptations and never ending upgrading needs.

This software offers a complete free version but as free comes with restrictions such as user limitations and functions reduced.

There are different prices depending on the license required starting from 175$ (approx). All licenses last forever, with no recurring costs and with software support totally free.

For more information about this software or to download the free version can be accessed Link 16
2.3.3 IBM Cognos, QPR and ProDacapo scorecards.

After the previous examples now should be much more clear the idea of business scorecard, what is it and how it works, but there are also many types of scorecards created by different development groups with varied fresh ideas and unique features. Next are will be shown just a few description of three more of these tools.

As has been shown in the reporting tools section IBM has a business intelligence suite called Cognos which includes various BI tools and also a business scorecard it’s included on it.

Business Intelligence software from IBM is meant to connect people anytime anywhere and let them share information in order to help them make better and faster decisions.

With the purpose of deliver better capabilities IBM Cognos includes also Scorecarding. How can this tool add value to the global solution?

Automate the strategy management process and the capabilities of monitor, measure and manage business metrics against operational objectives are the main functions of Cognos scorecarding. An example of this scorecard can be found in Figure 29 where can be observed the next tool properties.

A: easy access to a metrics tab with easy filtering and intuitive drop-down menus.

B: user-friendly simple interface with colors and trend arrows for a fast and logical understanding.

C: Possibility of adding targets and other parameters from external sources.
QPR is a software enterprise that provides everything to help organizations achieve its goals. Its software ensures fast results while cares about your enterprise processes, risks, performance, initiatives and other decisive factors in any enterprise.

Its software is a performance management tool which comes to upgrade old manual solutions to modern automatic processes as data collection, consolidation and reporting while also helps all kinds of enterprise personnel from the upper levels to every single worker to have its own view into business performance.
This tool not just stop by measuring and reporting also provide interesting inline features to improve present processes and help turning performance reporting into performance management. QPR advertisement can be seen on the next Figure 30

Figure 30: QPR Scorecard Advertisement

Prodacapo it’s an experienced company that provides software solutions for corporate performance management. By using its products many benefits will come as increase profitability, reduce costs, achieve goals, respond to changes…

Its understanding of current enterprises needs, has made them able to improve since nowadays offering quick implemented solutions ready to be used not in months but in weeks.

Its granted fast results and improvement of information flows are also important features to account.
To finish with proDacapo software and as a small resume of its product, should be mentioned that its scorecard main goal is communicate targets and action plans thought the organization

2.3.4 Recommended lectures on Scorecards

As done in the last section, here will be presented a few books that will help to get a better understanding of scorecards, some strategies and related useful information about this tools.

The Balanced Scorecard: Translating Strategy into Action

Robert S. Kaplan (Author), David P. Norton (Author)

Balanced Scorecards and Operational Dashboards with Microsoft Excel

Ron Person (Author)
Balanced Scorecard Step-by-Step: Maximizing Performance and Maintaining Results

Paul R. Niven (Author)

Credit Risk Scorecards: Developing and Implementing Intelligent Credit Scoring

Naeem Siddiqi (Author)

Scorecard Best Practices: Design, Implementation, and Evaluation [Hardcover]

Raef Lawson (Author), Denis Desroches (Author), Toby Hatch (Author)
2.4 BPM, EPM, CPM.

After reading this header the reader may be confused, and not for first time, because in BI there are hundreds of acronyms to describe almost everything and as many of these times, the three of above acronyms have only one common meaning. Business Performance Management, Enterprise Performance Management and Corporate Performance Management are just three synonyms for a single objective: A set of processes to manage organization’s performance.

This is not a tool as the ones we have seen in the previous sections, these processes use tools to perform actions and get results.

Its main purposes are define the main objectives that should be achieved, measure how these objectives are being reached and try to improve the current performance against these goals.

Usually this is a field more related to finances while other BI tools are more close to the IT departments and that’s why both can work fine complementing each other.

Because the information needs of this kind of actions like big reports and huge amounts of information filtering and processing, this processes has become more and more close to BI an its tools through last years and until nowadays when thinking about BPM means think about some BI components to achieve its goals.

On its core are included financial and operational planning, consolidation of data and reporting, business modeling and analysis and monitoring of KPI
To perform this actions there are many metrics and indicators that can help to know if things are really going right or not. All these parameters can help in different areas and to achieve different results; next will be shown some of them as real examples.

- If a new product is launched with defined targets, how many new customers have been acquired can be a metric to measure success or fail of this action.

- In a valuable customers reward campaign, the status of existing customers, and its degree of satisfaction can be a good parameter to measure.

- To compare between two (or more) areas a demographic analysis (actual, new, potential…customers, products, workers,…) can be the key to perform a good evaluation

- About some online offers, or websites remodeling, a click stream analysis can offer the results needed

- To check salesman or sales related factors, sales analysis (products, dates, amounts,…) will be a good idea

- And for many kinds of information also a callcenter analysis can give light to before dark areas.
By using and studying these parameters many KPI can be obtained for posterior treatment, with this information many processes can be improved, some examples are better decisions done because of decision-making support tools, ability to discern patterns or trends of the actual market, get better global enterprise vision or faster goal achievement because of clear and concise information to discern priorities.

Good BPM also helps on the integration process between the company and its CRM, ERP, SRM and all kinds of tools to improve enterprise performing.

But in order to obtain all these improvements all sorts of tools should be used by BPM, next are going to be listed some of the most common used ones, including the ones presented on the previous sections.

- OLAP ‘online analytical processing’ tools
- Data and document warehouses
- Data and text mining
- Decision support systems
- Business performance optimization tools
- Dashboards
- Scorecards
Among the previous tools above listed should also be considered a large list of dedicated performance management tools specialized in more concrete fields but that all respond to the same goal, evaluate and improve one or other field of the global business.

As seen in the previous paragraphs, BPM is not a concrete tool, but may include many software solutions in order to provide the results that should be expected from it. And actually is pretty common find that a unique suite sold as a BPM solution, includes dashboards and scorecards among other performance solutions.

Next, on Figure 31 are shown some actions that by being periodically monitored using BPM can be helped to achieve goals and become more efficient and effective.

Figure 31: Monitored areas by BPM
3 PART: EXPERIENCES
In this last part will be introduced 3 Interviews realized to Chinese enterprises from different fields and also a two months internship in one of this enterprises will be held in order to know how BI can affect the everyday business process.

In the first part (interviews) will be listed some official details about the enterprise and statistics and then some of the questions realized in order to get a closer approach, questions that have helped to develop the first section ‘Questions’

The enterprises have been carefully chosen following the next criteria:

- First should be enterprises with more than 1,000 employees.
- The foundation date should be more than five years ago.
- The company should be capitalized with more than US$ 1bilion.
- Must have a BI deployment
- Must be enterprises created and based on china mainland.

Once these criteria have been meet, some companies have been contacted in order to realize an interview related to business intelligence. The result of these interviews can be seen next.
3.1 CHINA MOBILE

Name: China Mobile Limited.

Name in simplified Chinese: 中国移动通信.

Type: Publicly-listed state-owned enterprise.

Industry: Telecommunications, Mobile communications.

Founded: Hong Kong (China) 1997

Headquarters: Queen's Road, Hong Kong. (China)

Key people: Wang Jianzhou (Chairman), Li Yue (CEO)

Employees: more than 150,000

Website: Chinamobileltd.com
Interviewee’s information:

- Jeff (rujx@zj.chinamobile.com)
- Call Center Manager and analyst.
- Graduated by Zhejiang University school of Management in Economics and Management.

3.1.1 Questions

1. Hello Jeff, thanks for your collaboration, to begin could you give a general approach about the company?

“A five minutes China Mobile introduction video is shown where can be appreciated the above company general information and get some images of real work.”

2. As responsible for the call center, what is the exact function of this area?

Once a customer have any doubt or problem with China Mobile services they are able to come directly to our offices, contact using internet or call to our call center. In this third case we are the responsible to attend this calls and try to solve any possible problem in the best way.

3. How can the customers contact?

All the china mobile users can call to 10086 to contact with our 24h hotline
4. In the previous video has been mentioned that can be controlled the workers volume to fit every moment, how can this be done?

By forecasting the calls volume can be controlled and predicted the number of workers needed at any time.

5. What will happen if the number of workers needed is minor than the current workers hired?

Our company has a policy to accumulate workers and try to not fire anyone unnecessarily, so when this happens we try to reallocate all our workers depending on the global company needs. Actually our company still growing fast so it’s more common to hire users than to have to fire anyone.

6. How do you control and discern between profitable workers and anyone that is not doing his job properly?

Many of our workers are rewarded with incentives depending on its goals achieving, so when a worker does fine its job it will be properly rewarded, instead if someone do not achieve any goal will not have rewards which will mean that next time should do its best.

7. With millions of clients and thousands of workers how do you deal with the information, how is the ETL process conducted?

Actually it’s not China Mobile by itself who does this process. Using outsourcing, Hua Wei it’s the enterprise responsible to realize the ETL task for China Mobile. They following criteria given by China Mobile intern managers analyze and decide which information its useful and which is not. Then the information obtained by China Mobile internal people it’s always useful and lacking of irrelevant information.
8. By using an external enterprise to treat with crucial data is not risky, also does not feel like lose some grasp with the real decision-making process, like lose some authority and control about one’s own situation?

Hua Wei it’s a big enterprise with professionals working on it and done its job just as it’s asked to do. The reasons to treat the information are not given to others and all the decisions and conclusions are obtained by internal personnel using own developed software.

9. Did ever thought about change the ETL process provider?

Actually we have been working with Hua Wei since the very beginning and even sometimes the results are not as good as we wish we are satisfied with the general balance.

Also since a few years before we collaborate to with YaXing, which will made that in a short future a decision to collaborate with just one of them become necessary.

10. Do you think that all the relevant information is gathered and used in the proper way?

Personally I’m satisfied with the current available information but of course more and better can be done and maybe more key information will be able to produce greater profits for our enterprise.

11. Do you use any BI tool like some report software or dashboards, scorecards, etc?

To realize the reports common templates are used but also depending on the area some fields and definitions are not common. To manage the customer relationships there are Balanced Scorecards.
12. How is the experience with BSC?

Actually the satisfaction is just moderated, many users think that the implantation still not finished and also that it will not really help to achieve its goals so the introduction of this kind of technologies its being a little hard. Some people just can think about ROI and not consider achieving other goals as a real requisite to success or goal to achieve.

13. Which is your vision of BI, do you relate some improvements achieved in last years to the use of BI?

Our current use of BI can improve some single areas or improve some features but, until these improvements not get generalized and reach common areas it will not be considered as a success, improve small departments or simplify some tasks is good, but still so much to be done.

A good point achieved yet by using BI it’s the accurate forecasting to control the calls volume and prepare the infrastructures according to it.

14. How do you measure the current success?

As long as we are dealing with call center department our first goals are the customer satisfaction, and of course generally talking the increase of benefits.

15. Which aspects you think can be improved in your field by using BI?

By the information about BI that I actually have, I think that control and get more new clients will be easier, a major knowledge about the actual ones also can be reached and prepare and control in a more efficient way the processes related with the call center.
16. Who decide if implant a new BI solution or not?

For BI topics a small committee it’s created to decide if implant a new solution or not.

Each section responsible can first discuss with its team mates about some BI needs, then goes to a higher levels until reaches the CEO who use to have the last word.

The decisions anyway are independently taken by provinces and areas. Here in Zhejiang province the decisions taken are independent from other provinces and just need Zhejiang responsible approval.

17. Who choose which solution is the better to solve the declared BI needs?

The chief of each section that is going to be affected (Call center in my case) it’s the responsible to take the first step, so it’s the one closer to the operational world. It will contact with the software enterprises in order to take one or other decision.

18 What do you think about the information quality, is it reliable and concise, clear and in real time?

Because of the agreement with external enterprises dedicated to realize this tasks our information it’s clear and reliable. And depending on our own needs it will be actualized daily, monthly or in fixed time periods agreed between them and us.

Also we try to share codes and names globally when its possible helped by a common general DB.
But also we have our own local DB and local criteria to select and classify information which makes this global common idea just an ideal hard to reach in some aspects.

19 How deal the company and a single department against outside unfixed factors like the competitors or global crisis?

Our enterprise has counter measures for a large list of events and also specialized departments and areas to take care about all the marketing factors. But always there is an unpredictable part that we try to control as much as possible and when it’s not possible just be prepared to fast changes and realize dynamic actions to counter it in the best possible way.

That’s all for now, thanks for your time and attention!
3.2 ALIBABA

Name: Alibaba Group

Name in simplified Chinese: 阿里巴巴集团.

Type: e-commerce

Industry: Internet

Founded: Hangzhou (China) 1999

Headquarters: Hangzhou

Key people: Ma Yun

Employees: 18,000

Website: www.alibaba.com
Interviewee’s information:

- Karl Zheng (karljung@alibaba.com)
- Director of Site Technical Division

3.2.1 Questions

1. **Hello Karl, thanks for your collaboration, to begin could you give a general approach about the company?**

“We take a tour around the company while Karl provide us information about the different areas and departments”

2. **This has been really interesting, but which is your department exact function and how is it related to the other ones?**

The main purpose of our department (Site Technical Division) is to keep control of the Website and improve it according to the everyday needs and new improvements. In Alibaba all the departments try to be as attached as it can be, caring about relations between all departments and cooperating.

3. **How does people to contact with your department?**

Our department main function is not to be contacted directly by final clients, but we are always open to any inconvenience or customer need. Our department can be contacted using internet or by phone. We have a support team prepared to respond to any client need by email or instant messaging (qq).
4. What can you tell me about the use of BI in the enterprise?

We use and develop our own BI tools; we are the final users, and unique owners. We think that it’s important to develop one’s own tools, and by doing it we can know and satisfy in a better way all our needs.

5. Which tools do you use and for what end?

Our most useful BI tools right now are dashboards which let us access to all the information we need in a simple fast way, but we use all kinds of BI tools with various purposes, since data warehouses to keep and organize the information, dashboards, scorecards and others.

The end can be from forecasting for future and present trends, to check which are our ‘hot products’ or to decide which should be the next featured ones.

6. Do you think that this tools help to improve your results and achieve goals faster?

Actually by using this tool we can access information that before we can’t and also treat it in a better way, actually we save and use even the cookies attached to every client that access our services, so I can affirm that by using this tools we have improved our services and also our efficiency.

Also by forecasting we can bode future results and needs and be able to avoid any future trouble.
7. Do you think that there is a direct relation between BI ROI and BI success?

Actually even the finances department will not agree with me I have to say that we already consider this BI implantation as a big success and I can tell you almost nothing about the ROI achieved until now.

8. How long has it been since it was decided to use BI?

BI was implanted in Alibaba in 2003/04 after enough data was gathered and the implantation had sense.

9. How are the BI related decisions made?

We have our own BI department that decides the course to take and sets the tactics and strategy of the processes related to business intelligence. Also every one of the five companies* have its own BI department to take its own independent decisions.

*Should be known that Alibaba Group it’s formed by 5 sub enterprises (Alibaba, Taobao, Alipay, Aalibaba cloud computing and Yahoo china)

10. How is the process of decision on the introduction of new BI features, who have the last word?

The basic idea can start on every level, from the most basic workers to even the CEO, then should arrive to the VP of its own area, who during the next meeting with other Chiefs like COO, CEO, CFO or CIO will discuss about it and finally also with the BI department support one decision or other will be taken.
11. What is your opinion about the actual information quality?

Actually we can access all the information we need easily and also create visual reports with the BI tools. Our information is abundant but organized, clear and reliable so I can affirm that I’m quite happy with the information quality.

Also I want to mention that we have all our information replicated in three different backup centers so its sure that even for unexpected disasters we will not lose our information.

12. How do you deal with local definitions or with reports from other places, there is any pattern to follow, some master report that should be followed?

Our company has global terms with common definitions that we share along all the users. Also the reports are created following some guidelines in order to make them understandable for everyone and indictable by our different tools. Of course like everywhere we have our own terms and local definitions but these are not included in global reports or in papers that can reach outside of our frontiers.

13. Is your information saved and processed in real time?

Depending on the process that this information is related we have different timing to access and treat all kinds of information we have from real time actualizations for the most relevant products and modifiable items to daily, weekly even monthly for some kind of secondary reports.
14. Do you have measures to counter unexpected events or external factors?

Our enterprise is prepared to face all the predictable events, and actually made many efforts to foretell future events in order to be prepared for future facts, but always there are unexpected agents that cannot be considered, in that cases is when one of our enterprise slogans find it sense ‘adapt fast or die’ is the policy that should be adopted always if you are a technological company and want to be on top.

15. I’ve seen that the present its resolved pretty well, what can you tell about the future then?

The present and future of Alibaba goes through ‘Alibaba Cloud Computing’, now our major efforts, best engineers and considerable capital its centered in transforming something new into something real that will probably be the future of our and many other enterprises.

That’s all for now, thanks for your time and attention!
3.3 HIKVISION

Name: Hikvision Digital Technology Co., Ltd.

Name in simplified Chinese: 海康威视

Type: Video Surveillance

Industry: Security

Founded: Hangzhou (China) 2001

Headquarters: Hangzhou

Key people: Yangzhong Hu (President), Polo Cai (Vice-President)

Employees: 3,600

Website: www.hikvision.com
Interviewee’s information:

- Name: Greg (luogang@hikvision.com)
- Responsible from technical support department

### 3.3.1 Questions

1. **Hello, thanks for your collaboration, to begin could you give a general approach about the company?**

   “We have a walk around a hall with Hikvision awards, some samples of their products are exposed, we have a brief introduction of some of them and then we see a live demo of how its products works”

2. **What can you tell me about the information gathered by the company from customers and providers?**

   Actually we develop our own products so the basic information we have to gather and treat it’s from our customers who usually are not final users.

   About this information we have specialized tools to deal with.

3. **Do you develop or buy this software?**

   Our enterprise develop software for our products but not for BI purposes, for this we have recently adopted an ERP from SAP
4. How long have you been using BI software then?

Before we have other independent solutions, but because of the fast growth of our company we had to change to SAP as long as it’s the only provider who can satisfy our actual huge information processing needs.

5. How has been the implantation process?

The implantation process has taken two years and everything has been done step by step making sure that everything previously done was completely integrated before take another step. Actually has been one year until the starting implantation finished.

6. How do you deal with the everyday of this software?

Actually we train all our workers to control and understand these solutions and consider its implantation as finished and successful just when plenty of the users can control and understand it completely.

7. Will you think about install a tool or software that will not give economic benefits but other kinds of rewards as staff happiness, improved global image or improved products?

Yes, of course, our main goal is achieve excellence in all the possible fields and any way that will approach this goal to get accomplished its something to consider for our teams.

8. Do you think that there is any relation between the use of BI and the fast growth in this last years?

Our fast development has been marked by several factors, but unmistakably one of them has been the use of BI.
9. Do you know and use the diverse BI tools that your enterprise have actually implanted?

Actually our enterprise has several BI tools, among them are OLAP, dashboards and scorecards, but unfortunately I can just get access to dashboards. I hope that in a near future the use of the other tools will became more generalized and accessible for everyone.

10. Do think that the long time that has taken the BI implantation is justified?

This implantations are so delicate and everything should be done in the right way and tested until everyone is satisfied with the result, sometimes can be a little bit inconvenient, but the final result is good and makes the wait worth.

11. Any BI implantation is a delicate process, did u have any problem during its implantation?

Actually to make this solution work everything should be clear and transparent, sometimes, some people will not feel so comfortable with that ideas and feel like will lose its power creating some undesired conflicts, but with the goal of a better enterprise in mind all these are just small problems that can be easily solved. Here and now, the teamwork is the key and single efforts are useless without a team to support every decision made.

12. How are the decisions made then, the ones affecting BI and the ones that not.

Every Monday a three hours meeting is hold with the CEO and other department chiefs to talk about the latest results, prepare to face the new challenges and discuss about the latest issues of the company.
13. Which do you think then that is the key to succeed in Hikvision’s BI implantation?

The key to succeed in BI implantation and in any other goal for hikvision is the corporate culture, the idea of a single team working together towards a common goal. That is our spirit and our major strength.

14. And which are other strengths to make Hikvision the huge company that is now?

In addition to our corporate culture, we have the best products, we are actually the seller num. 1 in China. We believe in the innovation and quality products and have more than 10% of our capital invested in R+D with more than 1,000 Engineers developing our software and hardware.

Also we cover big areas and have agreements with the Chinese government which makes us the strongest company in our market.

Another advantage is the cheap manpower and our huge demand which make us a big customer for our suppliers with which we can get good deals.

15. How will you deal with some unexpected agents, do you have any emergency plan?

Actually our engineers try to have covered all the possible situations, but always there is a margin error. In that cases, our qualified personnel will take care of the matter and try to evaluate and fix it as soon as possible.
16. And how is outlined Hikvision’s future?

Our previsions tell us that we will still growing fast during the next five years, in a few months more than 200 new employees will join our company, surpassing the 2.500 workers, we will move to a new and bigger zone and increase our customers all around the five continents, so actually our enterprise is in a good time with a hopeful future.

That’s all for now, thanks for your time and attention!
4  PART: LINKS, QUOTES AND FIGURE REFERENCES
4.1 Link References


4.2 Quote references

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4.3 Figure references


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