

## **Contract & Clauses, an indispensable tool to manage and protect the Intellectual Property within a company<sup>1, 2</sup>**

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### **ABSTRACT**

This paper aims to analyze and understand what the actions are to be undertaken for a company to control and manage their intellectual property. All companies have an intellectual property, yet few of them know how to manage it properly. Intellectual property, indispensable clause in the employment contract? How do you manage the protection of intellectual property? To answer these questions, we will focus on analyzing the different possible alternatives to protect and manage its intellectual property. To have the best possible vision we have used the root-cause-analysis, as well as other tools such as non-compensatory model, a multi-attribute decision-making grid, a matrix analysis and an additive weighting technique model. This tool aims to assess each scoring attributes and alternatives. Finally, we use the Pareto model to highlight the impact that the implementation of our best alternatives on the company will have. Finally, the solution Employment contract & clauses represents the best alternatives to protect and manage intellectual property.

**Key words:** Intellectual property / Laws / Impact / Contract / copyright / patent / clause

### **INTRODUCTION**

In the digital and computer age, works and creations are less and less protected. Thanks internet, we have access to a vast amount of work, documents, logos (etc.) in a free and instantaneous way. It has therefore become of paramount importance for businesses and individuals to protect their innovation, creation and work. Intellectual property rights are constantly rising in the world. “In 2016 there are more than 58 million intellectual property rights as well as more than 3 million

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applications for patents”<sup>3</sup> according to WIPO Statistics Database.

The expression of intellectual property is a concept that was born in 1967 at the same time as the creation of the "World Intellectual Property Organization"<sup>4</sup>. It has become common for only a few years, and this term refers to all innovations, literary and artistic works, but also names, logos, images, patents (etc.) used in the commercial sector. There are two major aspects: Industrial property and copyrights.

- *Industrial property*<sup>5</sup>: “Industrial property is a right forming one of the branches of intellectual property. It refers to rights granting and protecting a temporary monopoly of exploitation over a technical process. It also protects a mark or other sign allowing the identification of an industrialist or a merchant. Patents, designs and models may be subject to industrial protection if their authors so request.” It is with the National Institute of Industrial Property (INPI) that a company can protect its intellectual property.

- *Copyright*<sup>6</sup>: “This is the exclusive right preserved to the creator for his creation. It can be a patent, trademark and trade secret. This right promotes the authors to create more innovations. Generally, the life of copyright is the entire lifespan of the creator plus another 50 or 100 years. Copyright gives the right to copy to the creator which can be used to charge for the usage of his creation.” In general, it allows the creator, owner, owner of a patent, to be protected by copyright and prevents any third party from taking advantage of his work or his investment in a creation. These rights are set out in Article 27 of the Universal Declaration of Human Rights.

Protecting your intellectual property is protecting your portfolio and these assets, and is the responsibility of project management. When you have a business, recruiting employees, working with suppliers (etc.) you will have to sign contracts. It is up to the contract management team and / or the managers to identify, analyze and take the necessary actions to protect the company and its resources. Intellectual property theft can be bad for a business so much that it has become an important issue for the proper functioning of the business. Many companies have turned to employment contracts to protect their assets. It is necessary to take into account several aspects to achieve employment contracts that will protect the company effectively. Indeed, since each employee does not have the same status, positions and responsibilities, it is necessary to succeed in managing all the contracts whatever it is. But it’s also important to manage all the assets and projects in relations to Intellectual Property in order to collect revenue and profit. That’s why

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<sup>3</sup> Wipo. (2017) World intellectual property indicators. Retrieved from [http://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_941\\_2017.pdf](http://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2017.pdf)

<sup>4</sup> Qu’est-ce que la propriété intellectuelle? (n.d.). Retrieved from <http://www.wipo.int/about-ip/fr/>

<sup>5</sup> Propriété industrielle (définition). (n.d.). Retrieved from : <https://droit-finances.commentcamarche.com/faq/23944-propriete-industrielle-definition>

<sup>6</sup> Zigu. (n.d.). Copyright Definition | Marketing Dictionary | MBA Skool-Study.Learn.Share. Retrieved from : <https://www.mbaskool.com/business-concepts/marketing-and-strategy-terms/6863-copyright.html>

companies use project, program, portfolio and asset management to issue personalized contracts to employees and control that intellectual property does not leave the company.

Definition	Example
<p><b>Project management:</b> “an investment that requires a set of logically linked and coordinated activities performed over a finite period of time in order to accomplish a unique result in support of a desired outcome”<sup>7</sup></p>	<p>For example, a Video Games company want to create a new game, so they need to manage the employee, the tools the knowledge in order to accomplish their result, namely earn benefits.</p>
<p><b>Program:</b> Program: “it exists 4 types of program:</p> <ol style="list-style-type: none"> <li>1. <i>Strategic program:</i> Set of related projects, combined with the purpose to attain the sponsor’s future state. This program is linked to a specific strategic goal and its early results influence the further decision-making process</li> <li>2. <i>Operational program:</i> Interdependent constituent projects, aiming to affect sponsor’s day-to-day operations</li> <li>3. <i>Multi project program:</i> Created interdependence of constituent project in order receive benefits from the synergy</li> <li>4. <i>Mega project:</i> Project with significantly larger scale than the typical sponsor’s projects have.”<sup>8</sup></li> </ol>	<ol style="list-style-type: none"> <li>1. A company can develop a specific structure to oversee the different project. This structure work in order to ensure that each project play a role in the final goal of being able to protect the Intellectual property</li> <li>2. A company can also have an operational program. They are responsible to monitor and control the project that have an impact on day-to-day operation within the enterprise For example, a project that aims to train employee about IT.</li> <li>3. A company can also have a structure to control and oversee project that are totally different but can benefit from each other. For example, a project on IP patents can be link to a project of development of software. By sharing knowledge and know how, a company can earn benefits</li> <li>4. A company can invest in mega project. For example, if a company want to create a new way of producing energy in the desert, they will need to separate the work into smaller sub-project: Building the infrastructure, building the new way of producing energy and the way to store it, develop the patent etc.</li> </ol>
<p><b>Portfolio of Asset:</b> “It exists 5 types of assets:</p> <ol style="list-style-type: none"> <li>1. <i>Information Assets:</i> are normally controlled by functional groups such as IT or Engineering;</li> <li>2. <i>Human Assets:</i> are controlled by HR;</li> <li>3. <i>Physical Assets:</i> are controlled by either operation (“plant manager”) or other</li> </ol>	<ol style="list-style-type: none"> <li>1. “An information asset is a body information that has financial value for the organization”<sup>10</sup> For example, patents, copyrights, trade mark, software are an information asset that a company can sold or licenses to earn benefits.</li> </ol>

<sup>7</sup> Bill Duncan (n.d.). what exactly is a “project”? Retrieved from <https://www.linkedin.com/feed/update/urn:li:activity:6357416976318558208/>

<sup>8</sup> Global Alliance for Project Performance Standards (2011) [Program Typology](http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNizYMEqFDAdjZn33DdYs6zC_4JjJk_D7gaaBIL-11Cbw). Retrieved November 20, 2018, from [http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNizYMEqFDAdjZn33DdYs6zC\\_4JjJk\\_D7gaaBIL-11Cbw](http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNizYMEqFDAdjZn33DdYs6zC_4JjJk_D7gaaBIL-11Cbw)

<sup>10</sup>

<p>functional entities such as “heavy equipment shop”;</p> <p>4. <i>Financial Assets</i>: are controlled by accounting or finance and lastly; <i>Intangible Assets</i>: which are defined to be the difference between a company’s book value and market capitalization value is controlled by sales and marketing or public relations departments.”<sup>9</sup></p>	<ol style="list-style-type: none"> <li>2. Human asset are the skills that the employees have. For example, it’s the skills and knowledge that an employee has to code a software.</li> <li>3. Physical asset is for example a secure room to protect the IP physical assets such as document, server etc.</li> <li>4. Financial asset for company are the trademarks, patents, copyrights etc.</li> </ol> <p>An intangible asset for a company can be the relationships, the contracts, good will and so on.</p>
<p><b>IP portfolio of Project:</b> “A “portfolio of projects” is no different than any investment portfolio, the objective being to minimize the risk and maximize the return. Any organization, be it Owner or Contractor has a portfolio of assets (resources) available to dedicate to projects, with the objective being to develop the best “mix” of projects which will generate the most favorable return on those assets.”<sup>11</sup></p>	<p>From the company's point of view, IP right's contracts are part of the business activity. In general, IP portfolio manager must consider all issues such as: the remuneration of employee who creates or builds somethings, confidentiality agreements with supplier / partner / co-owners, the grant of licenses and transfer of Intellectual Property theft, the use of IP rights (etc.). To ensure that these key points are treated and supervised efficiently in order to gain benefits, the companies must remain under the management of the organization. Portfolio Management is used to manage the relationship between projects and the economic impact that the IP has on the company."From the perspective of IP-portfolio management, the processes and tools that enable acquisition, analysis, and organization of IP information are usually the same. Scope of a patent search, resulting in IP analysis, and delivery of information is often quite different.”<sup>12</sup> In general, project portfolios allow companies to select the projects they wish to develop in order to benefit from the success of their projects.</p>
<p><b>Asset:</b> “An “asset” can be described as being “A tangible or intangible resource with economic value that an individual, corporation or country owns or controls with the expectation that it will provide future benefit.”<sup>13</sup></p>	<p>In order to accomplish the various tasks to carry out an IP project, companies have access to many resources. These resources include, money, employees, equipment, contracts, knowledge and information available (etc.). In the case of an IP mangers, it will use tangible and intangible assets such as software, contract, knowledge and all other</p>

<sup>9</sup> Adapted from an Investopedia definition. Retrieved on, November 20, 2018, from [http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC\\_4JjJk\\_D7gaaBIL-11CbW](http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC_4JjJk_D7gaaBIL-11CbW)

<sup>11</sup> GUILD OF PROJECT CONTROLS COMPENDIUM and REFERENCE (CaR) | Project Controls - planning, scheduling, cost management and forensic analysis (Planning Planet). (n.d.). Portfolios of Projects. Retrieved November 20, 2018, from [http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC\\_4JjJk\\_D7gaaBIL-11CbW](http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC_4JjJk_D7gaaBIL-11CbW)

<sup>12</sup> IP Portfolio Management: Negotiating the Information Labyrinth. (n.d.). Retrieved from <http://www.iphandbook.org/handbook/ch12/p04/>

<sup>13</sup> Adapted from an Investopedia definition. Retrieved on, November 20, 2018, from [http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC\\_4JjJk\\_D7gaaBIL-11CbW](http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls?fbclid=IwAR1wj7rohXPEStWNIzYMEqFDAdjZn33DdYs6zC_4JjJk_D7gaaBIL-11CbW)

	resources necessary to protect the intellectual property of the company.
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The manner in which the clause and the contract is written will have a direct impact on your intellectual property right. For example: How many years do you want to use the specific software or logo produced by your service provider in a market? At the end of the contract, do you want to allow a new, selected service provider to carry out third-party maintenance on your software or adapt your graphic charter? Would you like to send the delivered solution to other administrations? Do you want to distribute it under a free license?

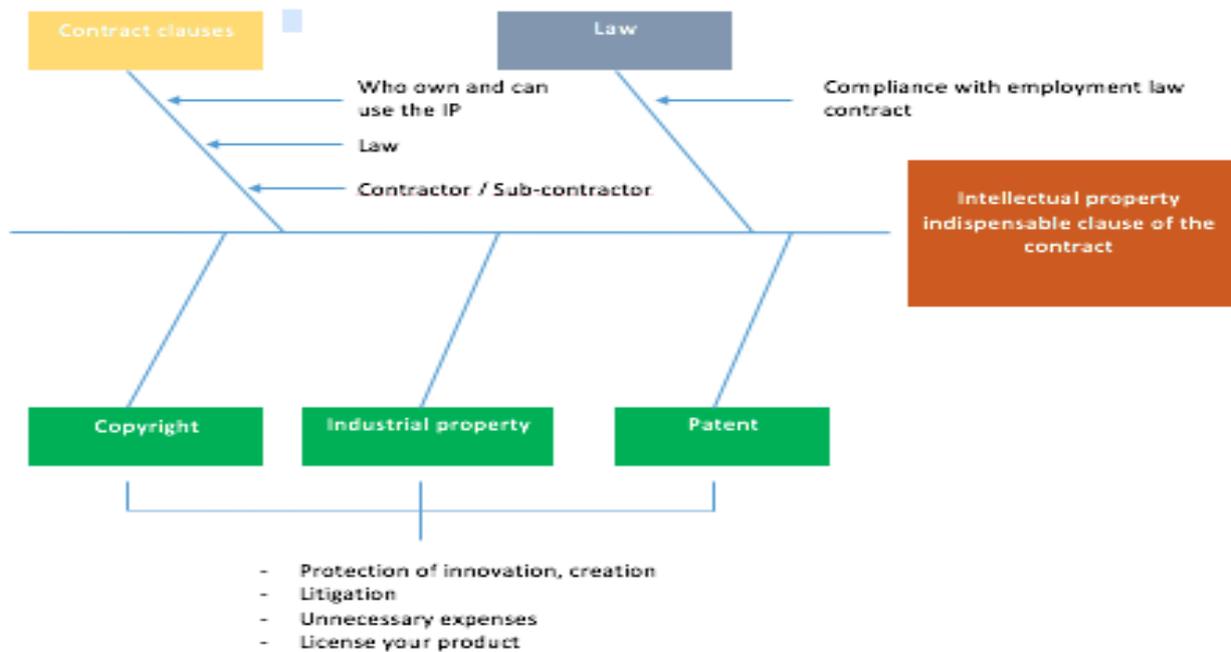


Figure 1: Fishbone Diagram<sup>14</sup>

From a more specific point of view, when you are engaged in a company and you sign a contract with a company, you will be brought to bring and / or create value for it. In addition, you will access to company-specific data and information. Some data is strictly confidential, it is necessary when signing the contract to take into account all aspects and necessary measures to prevent his information from leaving the company. From the point of view of the employee, if he invents or creates something, who owns the intellectual property right? The employee or the company? These are variables that managers and human resources must take into account when recruiting and signing the contract, otherwise risks and costs may have occurred.

So, we can, then, ask ourselves:

- Is it necessary and indispensable to include clauses on property rights in employment contracts?
- How manage the access of the intellectual property to protect your intellectual property?

<sup>14</sup> By Author

This document will show in a 1st part that the clauses can vary according to the laws and the country in which the contract comes into force, then we will observe what kind of clause can be implemented to protect the intellectual property rights. Finally, we will endeavor to demonstrate that clauses are essential for the proper functioning of a company.

At the end of this research, we will be able to understand what is intellectual property, and how to manage and protect it.

## **METHODOLOGY**

### **Step 1:**

As introduced before, there is a real and inherent problem around the way a company must manage his Intellectual property in order to protect their interest, knowledge and assets. “Patents protect ideas, but ideas have fuzzy boundaries. This allows some to develop a legal strategy on contentious cases”<sup>15</sup>. So, organizations need to identify, highlight and use the best methods to: secure, manage, control and transfer their Intellectual Property.

### **Step 2:**

Before talking about alternatives, it is important to understand that intellectual property theft represents a considerable risk to business development. Counterfeiting and the reproduction of products, tools and / or services is becoming increasingly important. Ease by selling on the internet, no sector is spared. This leads to unfair competition, destruction of jobs, loss of value (creating confusion between the original product and the counterfeit product) and can sometimes endanger users.

To protect the intellectual property, and allow the creation of value, the valuation of your creations, the development on certain market, increase the credibility and protect these consumers, there are many ways. Companies can rely on employment contracts, physical and digital security, trades secret, label valuable IP, prioritize IP (What, where and which IP are important), encryption or use the open source.

#### *1. Employment contracts & clauses*<sup>16</sup>

In general, it is the employee who has the property rights to an invention created by his employee

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<sup>15</sup> David Friedman. (n.d). *Propriété intellectuelle*. Retrieved from: [https://www.wikiberal.org/wiki/Propriété\\_intellectuelle](https://www.wikiberal.org/wiki/Propriété_intellectuelle)

<sup>16</sup> What terms do I include in employment contracts to protect my intellectual property? | Business Queensland. (2016, 13). Retrieved from <https://www.business.qld.gov.au/running-business/protecting-business/ip-kit/browse-ip-topics/ownership-of-intellectual-property-created-by-your-employees-and-contractors-or-consultants/employment-contracts>

if it is carried out within the scope of his duties or in relation to one of his sectors. Conversely, the employee is the owner if the invention is made outside of his work. The factor to consider is whether or not his duty was to create intellectual property. It is therefore necessary that the tasks and the nature of his work, the position of the employee, that ability to have access to information, be clearly explained in the contract.

In addition, the employer must take into account and mention certain terms when signing the contract:

1. Who owns the property of intellectual property?
2. An employee's signature on the documents deemed essential to guarantee the employer's right of ownership over the employee's creations, during and after the employment.
3. A confidentiality clause not to disclose corporate secrets. This should include everything related to what the employee (himself) or other colleagues are creating, but also to all information about the company itself (customers, budget, document etc.)
4. The waiver of his moral rights over protected works (computer program, copyrights for example)
5. And a constraint on the competition (do not join a competitor and provide information about his former company during a given period)

## 2. Physical & digital security<sup>17</sup>

If a company focuses solely on IT solutions (software etc.) to protect IP, it will abandon other physical and digital means to store and protect its assets.

Intellectual property can be stored in several ways: Photocopies and paper documents, in the cloud, through an application, in a database etc.

It is therefore important to secure this information and data optimally. To achieve this, a company must use physical means such as secure rooms to store all paper documents, with a register to know who had access to the room, and what kind of information he / she can use.

The company can also use digital means, with for example passwords to access the database, but also a way to control and monitor access to data depending on the role and role that each occupies. The purpose of this kind of initiative and to restrict access to information, only to the people who really need it to do their job but also to secure intellectual property against any kind of theft.

## 3. Trade Secret<sup>18</sup>

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<sup>17</sup> Alyson Behr and Derek Slater. (2017, September 6). How to protect intellectual property? 10 tips to keep IP safe. Retrieved from <https://www.csoonline.com/article/2138380/loss-prevention/how-to-protect-intellectual-property-10-tips-to-keep-ip-safe.html>

<sup>18</sup> Comment protéger les secrets d'affaires? (n.d.). Retrieved from [http://www.wipo.int/sme/fr/ip\\_business/trade\\_secrets/protection.htm](http://www.wipo.int/sme/fr/ip_business/trade_secrets/protection.htm)

To protect its IP, the company can also resort to trade secrets. "Business secrets protect trade secrets or trade secrets, as well as trade secrets. The unauthorized use of such information by persons other than the holder is considered an unfair practice and a breach of business secrecy. " The current trade secret protection law is intended to protect against theft of data relating to sales methods, distribution methods, consumer profiles, advertising strategies, supplier and customer lists, etc. In general, this corresponds to industrial or commercial espionage, breach of contract and breach of trust.

#### 4. Prioritize your IP<sup>19</sup>

Companies have extensive intellectual property, whose value to the business is not always the same. Some may be very expensive and important, others are of low utility and inexpensive. Prioritizing the value of intellectual property is therefore a strategy to defend it. Companies through the analysis of costs, benefits and risks, can select the important assets to defend and which means to put in place to achieve it.

#### 5. Label valuable IP<sup>20</sup>

When a company invents or creates things and that this thing is an important asset to the company, in order to avoid any theft, it may decide to label its invention or its idea to protect its intellectual property. It is through patent, copyright, trademarks and design rights that it can do it. These are powerful tools against intellectual property theft, governed by organizations aimed at protecting everyone's assets.

#### 6. Encryption<sup>21</sup>

In order to defend the intellectual property of every person and business, a new way has emerged. Rather than seeking protection through the law, companies can, through technology, defend and manage their IP. Basically it's a new kind of software that encodes data to make it unusable for other people. "Encryption facilitates IP management by protecting content against disclosure or modification both during transmission and while it is stored". For example, if company A steals the encrypted data from company B, company A will not be able to use the data because it will be blocked. And the only way to achieve this is to have access to the decryption key.

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<sup>19</sup> Alyson Behr and Derek Slater. (2017, September 6). How to protect intellectual property? 10 tips to keep IP safe. Retrieved from <https://www.csoonline.com/article/2138380/loss-prevention/how-to-protect-intellectual-property-10-tips-to-keep-ip-safe.html>

<sup>20</sup> UK Copyright Service. (n.d.). Intellectual property: Copyright, trademarks and patents. Retrieved from [https://www.copyrightservice.co.uk/copyright/intellectual\\_property](https://www.copyrightservice.co.uk/copyright/intellectual_property)

<sup>21</sup> 5 Protecting Digital Intellectual Property: Means and Measurements | The Digital Dilemma: Intellectual Property in the Information Age | The National Academies Press. (n.d.). Retrieved from <https://www.nap.edu/read/9601/chapter/7#156>

### 7. *Educate Employees*<sup>22</sup>

Many people do not understand the importance of intellectual property for a business. Sometimes some people do not even realize the consequences of their actions on the IP and the damage it can cause. It is therefore important to educate, through meeting, training, test, employees to intellectual property in order to avoid any actions that would have a negative impact on the intellectual property of the company

#### Measure attribute, evaluate or asses each alternative:

Now we will analyze these different alternatives. For this, we will use the important attributes for each alternative and study them in more depth (so that we can classify them) to analyze the best solution to use.

- **Time of implementation**<sup>23</sup>: This attribute was chosen to evaluate the implementation time of each of the alternatives within the company.
- **Cost of implementation**<sup>24</sup>: This attribute has been chosen to compare the different costs required for the implementation of the alternatives.
- **Effective protection**<sup>25</sup>: This attribute aims to emphasize and compare the real effectiveness that each alternative offers (whether or not the alternatives protect the company well.).
- **Feasibility**<sup>26</sup>: it aims to the difficulty to implement each alternatives.
- **IP Revenue & Profit Contribution**<sup>27</sup> : “In the last 10 years, a brand new sector of many small and medium-sized innovative businesses has appeared whose activities depend on

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<sup>22</sup> Henry, M. (n.d.). Human Resources and Intellectual Property: How to Implement Confidentiality Policies. Retrieved from <https://www.henrypatentfirm.com/blog/how-to-implement-confidentiality-policies>

<sup>23</sup> Comment faire et comment se passe le dépôt d'un brevet en France. (n.d.). Retrieved from [http://www.privatepatent.com/guide\\_deposerbrevet\\_fr.php](http://www.privatepatent.com/guide_deposerbrevet_fr.php)

<sup>24</sup> Harroch, R. (2017, June 6). 10 *Intellectual Property Strategies For Technology Startups*. Retrieved from : <http://observatoire-immateriel.com/wp-content/uploads/2015/11/Etude-Savoir-Faire.pdf>

<sup>25</sup> Observatoire de l'immatériel, direction générale des entreprises du ministère de l'économie, de l'industrie et du numérique. (2015) *La protection du savoir-faire*. Retrieved from : <https://www.forbes.com/sites/allbusiness/2017/06/06/10-intellectual-property-strategies-for-technology-startups/#3510aa95ab1b>

<sup>26</sup> Harroch, R. (2017, June 6). 10 Intellectual Property Strategies for Technology Startups. Retrieved from <https://www.forbes.com/sites/allbusiness/2017/06/06/10-intellectual-property-strategies-for-technology-startups/#3510aa95ab1b>

<sup>27</sup> Measuring Intellectual Property: Top 5 IP Metrics. (2017, September 28). Retrieved from <https://www.machinedesign.com/industrial-automation/measuring-intellectual-property-top-5-ip-metrics>

intellectual property, so demand has appeared for an effective system of IP protection,”<sup>28</sup>. The protection of intellectual property is seen as an asset by many companies. What protections offers the greatest revenue and benefit for society. This is why we will use this attribute to evaluate different alternatives.

- **Labor and effort**<sup>29</sup> : this attribute aims to evaluate the workload and the effort required to set up each alternatives.
- **Dispute risk**<sup>30</sup>: this attribute aims to measure the risks that disputes arise concerning the intellectual property according to the chosen alternatives.

### Step 3:

We will now compare and rank each attribute between them in order to analyze the different options. Each solution has these advantages and disadvantages, and it is necessary to underline and understand them in order to be able to classify them efficiently. We will use a Ranking system and score, to allow this analysis. We have chosen 7 essential attributes to take into account to solve the problems related to the protection and the management of the intellectual property. Through the use of the non-compensatory model based on a disjunctive reasoning we will be able to rank the attributes in an ordinal way.

Attributes/Solution	Dispute risk	IP strength & Quality	IP revenue & profit contribution	Feasibility	Effective protection	Cost of implementation	Time of implementation
Time of implementation	1	0	0	0	0	0	
Cost of implementation	1	1	0	1	0		1
Effective protection	1	1	1	1		1	1
Feasibility	1	1	0		0	0	1
IP revenue & Profit contribution	1	1		1	0	0	1
Labor & effort	1		0	0	0	0	1

<sup>28</sup> Protecting intellectual property in an open source world. (2018, February 1). Retrieved from <https://sk.ru/news/b/articles/archive/2018/02/01/protecting-intellectual-property-in-an-open-source-world.aspx>

<sup>29</sup> Ackerman, P. (2016, July 14). Intellectual Property Metrics You Should Be Tracking. Retrieved from <https://www.innovation-asset.com/blog/intellectual-property-metrics-you-should-be-tracking>

<sup>30</sup> Harroch, R. (2017, June 6). 10 Intellectual Property Strategies For Technology Startups. Retrieved from <https://www.forbes.com/sites/allbusiness/2017/06/06/10-intellectual-property-strategies-for-technology-startups/#31632ca1ab1b>

Dispute risk	0	0	0	0	0	0	0
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Figure 2: Weight of each attributes<sup>31</sup>

Ordinal ranking		Possible Mark		
1	Effective protection	High	Medium	Low
2	Cost of implementation	Low	Medium	High
3	IP revenue & profit contribution	High	Medium	Low
4	Feasibility	Easy	Medium	Hard
5	Labor & effort	Low	Medium	High
6	Time of implementation	Low	Medium	High
7	Dispute risk	Low	Medium	High

Figure 3: Ordinal ranking of each attributes, and their possible scores<sup>32</sup>

Thanks to this method, we can now highlight the most important attributes. The most important aspect to take into account is the Effective protection of the Different Alternatives uses to protect the intellectual property. Then we retrieve the cost of implementation and IP revenue & profit contribution (to important variable for each company). Next we can find the feasibility and the labor & effort to put this alternative in place. The worst attributes, according to this analyze, is the time required to put in place these alternatives and the Risk that dispute will arise depending on the alternatives chosen.

**Step 4:**

We are now going to use a multi-attribute decision making model to compare the different attributes with the alternative solution seen in the step 2. The purpose is to highlight which solution is the best one compare to others.

See above the attributes classified according to their relevance, and their different ratings.

Criteria / Solution	Employment contract & clause	Physical & digital security	Trade Secret	Prioritize IP	Label valuable IP	Encryption	Educate employees
Effective protection	High	Medium	Medium	Medium	High	High	Low

<sup>31</sup> By Author

<sup>32</sup> By Author

Cost of implementation	low	Medium	Low	Medium	High	Medium	Low
IP revenue & profit contribution	Medium	Medium	Medium	Medium	High	High	low
Feasibility	Easy	Hard	Medium	Medium	Medium	Medium	easy
Labor & effort	Low	High	Low	Medium	High	Medium	Low
Time of implementation	Medium	High	Low	Medium	High	Medium	Medium
Dispute Risk	High	Medium	Medium	Medium	Low	Low	High

Figure 4: Marking of the alternatives to protect and manage intellectual property<sup>33</sup>

The matrix above gives us an overview of the relevance of each alternative. Due to strong efficiency, low cost and implementation time, as well as an easy feasibility, job contracts & clause seems to be a better alternative to protect its intellectual property. Nevertheless, Secret Trade solutions as well as Encryption also seem very good ways to manage and protect its assets.

In order to analyze the alternatives more deeply, we will proceed to an evaluation of the weight that each attribute represents in the different solutions. To do this we will use the compensatory model. We will use the weight and color notation below for each attribute:

Color			
Weight	1	0,5	0

Figure 5: Weight grid<sup>34</sup>

<sup>33</sup> By Author

<sup>34</sup> By Author

This gives us the following picture:

Criteria / Solution	Employment contract & clause	Physical & digital security	Trade secret	Prioritize IP	Label valuable IP	Encryption	Educate employee
Effective protection	1	0,5	0,5	0,5	1	1	0
Cost of implementation	1	0,5	1	0,5	0	0,5	1
IP revenue & profit contribution	0,5	0,5	0,5	0,5	1	1	0
Feasibility	1	0	0,5	0,5	0,5	0,5	1
Labor & effort	1	0,5	1	0,5	0	0,5	1
Time of implementation	0,5	0	1	0,5	0	0,5	0,5
Dispute risk	0	0,5	0,5	0,5	1	1	0
Total	5	2,5	5	3,5	3,5	5	3,5

*Figure 6: Weight of the alternatives<sup>35</sup>*

A company can choose not to develop all these solutions. This is why it is necessary to measure which alternative is better compared to the others. The table above shows us that there seems to be 3 alternatives that are better than the others: Employment contract & clause, Trade secret and Encryption. But which one is the best solutions? and what about the others? To have a better judgement we will analyze, in the next step, the relative weight of each Alternatives.

## FINDINGS

### Step 5:

Thanks to the additive weighting technique, we will now summarize the decision-making progress of the study we led in step 3 and 4. We will compare the weight of the attributes with the weight of the solutions gather. Although employment contract seems to be the best alternative observed, it is important to measure the relative weight of the other two solutions to know that it would be the second best.

<sup>35</sup> By Author

Attribute	Normalization		Employment contract		Physical & digital security		Trade secret		Prioritize IP		Label valuable IP		Encryption		Educate employee	
	Rank	Weight(A)	B	A*B	C	A* C	D	A* D	E	A* E	F	A* F	G	A*G	H	A*H
Effective protection	1	0,25	1	0,25	0,5	0,13	0,5	0,13	0,5	0,13	1	0,25	1	0,25	0	0
Cost of implementation	2	0,21	1	0,21	0,5	0,11	0,5	0,11	0,5	0,11	0	0	0,5	0,11	1	0,21
IP revenue & profit contribution	3	0,18	0,5	0,09	0,5	0,09	1	0,18	0,5	0,09	1	0,18	1	0,18	0	0
Feasibility	4	0,14	1	0,14	0	0	0,5	0,07	0,5	0,07	0,5	0,07	0,5	0,07	1	0,14
Labor & effort	5	0,11	1	0,11	0,5	0,05	1	0,11	0,5	0,05	0	0	0,5	0,05	1	0,11
Time of implementation	6	0,07	0,5	0,04	0	0	1	0,07	0,5	0,04	0	0	0,5	0,04	0,5	0,04
Risk dispute	7	0,04	0	0	0,5	0,02	0,5	0,02	0,5	0,02	1	0,04	1	0,04	0	0
total	28	1		0,84		0,39		0,68		0,50		0,54		0,73		0,5

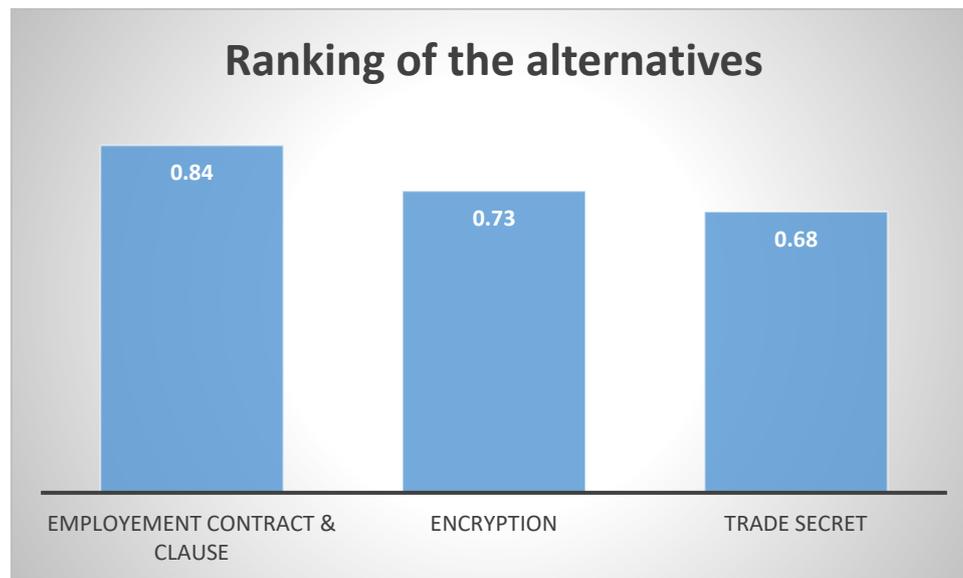
Figure 7: Relative weight of the alternatives<sup>36</sup>

This analyze confirm our supposition. After analyzing the relative weight, the 3 alternatives that are employment contract, trade secret and Encryption are the best solutions to protect and manage intellectual property according to the relative weight of attributes. In the next part, we will analyze the solution to be prioritized according to certain variables and aspects.

### Step 6

We will now classify the different alternatives according to the study of the relative weight. 5. In addition, we will detail the reasons for our choice and the aspects to be taken into account in each alternative. We will only consider alternatives with a relative weight of more than 0.60. Any alternatives below this ratio, does not have the required criteria to be the best solution to protect and manage its intellectual property. We will not retain the solutions that are Physical & digital security, Prioritize IP, label valuable IP and educate employee.

<sup>36</sup> By Author



*Figure 8: Rank of the Alternatives*<sup>37</sup>

Secret trade is a good solution for several reasons. Indeed, it is a solution that makes it possible to implement quickly and at low cost a means of protection for the IP. In addition, this alternative is very easily implantable and can require management effort. In addition, although "The unauthorized use of such information by persons other than the holder is considered an unfair practice and a breach of business secrecy. According to the legal system in force, the protection of business secrets is part of the general principle of protection against unfair competition"<sup>38</sup>. Nevertheless, it is a risky solution because competitors or malicious people can still steal these secrets of business. "More than 85 percent of the trade secret lawsuits in state and federal courts of the United States, the alleged misappropriator was either an employee or a business partner"<sup>39</sup>. This solution does not provide optimal protection. In addition, she makes an average contribution to the company. This is why it is ranked lower than the other 2 alternatives.

We then find the alternative Encryption. Even if the actions taken to implement this solution are more expensive, require more time and effort than the secret trade, this IT system allows a real and effective protection. This solution is a real asset that companies can use in other sectors. It therefore potentially brings a better contribution and that the Secret Trade. Finally, the risk that disputes will occur is very small. This is allowed thanks to the strong protection that this solution offers. From a general point of view this is why its impact for protecting its assets and its

<sup>37</sup> By Author

<sup>38</sup> Protéger les secrets d'affaires de votre PME. (n.d.). Retrieved from [http://www.wipo.int/sme/fr/ip\\_business/trade\\_secrets/trade\\_secrets.htm](http://www.wipo.int/sme/fr/ip_business/trade_secrets/trade_secrets.htm)

<sup>39</sup> Eight steps to secure trade secrets. (n.d.). Retrieved from [http://www.wipo.int/wipo\\_magazine/en/2016/01/article\\_0006.html](http://www.wipo.int/wipo_magazine/en/2016/01/article_0006.html)

intellectual property is higher.

Finally, the alternative employment contract represents the best solution for a company. This solution makes it possible to have a legal (powerful) aspect to protect and manage its intellectual property. The cost and implementation time of this solution is very low. A manager, with notions of law and the help of a business lawyer, can easily draft a contract with clauses to protect intellectual property. Compared to other alternatives, employment contract is the simplest to set up, in a relatively short time but with an efficiency well above the average. The only negative point is that this solution is most likely to see dispute arise. It is therefore necessary that companies take this aspect into account is that they are very attentive to minimize this uncertainty.

### Step 7

From now, as we have chosen the best alternatives to protect and manage the intellectual property within a company, we will conduct a Pareto analysis to justify the effect of employment contract on the intellectual property, as well as on the assets of the company.

Pareto Analysis "is a simple technique for prioritizing possible changes by identifying the problems that will be resolved by making these changes. By using this approach, you can prioritize the individual changes that will most improve the situation"<sup>40</sup>.

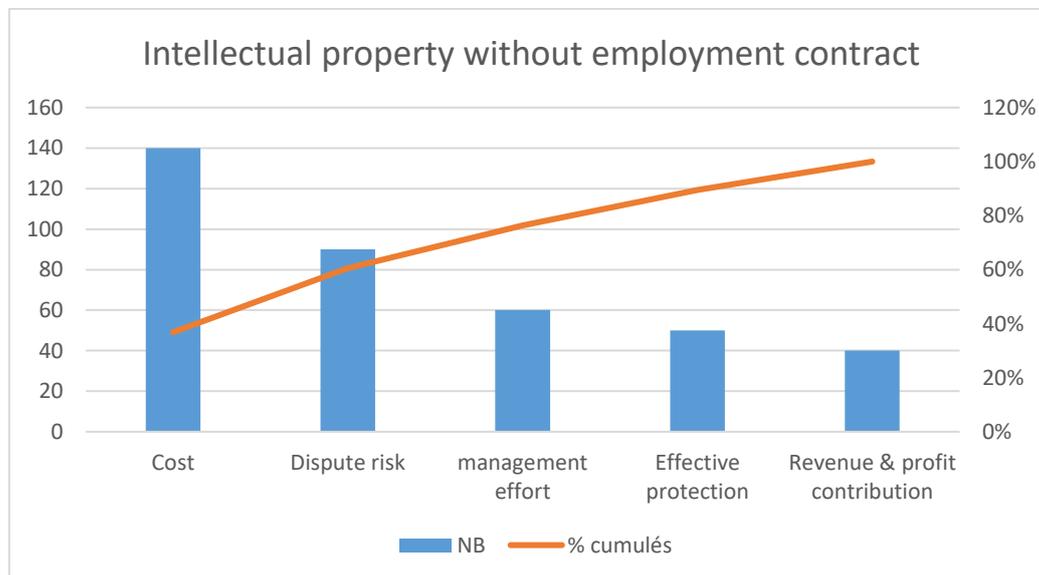


Figure 9<sup>41</sup>

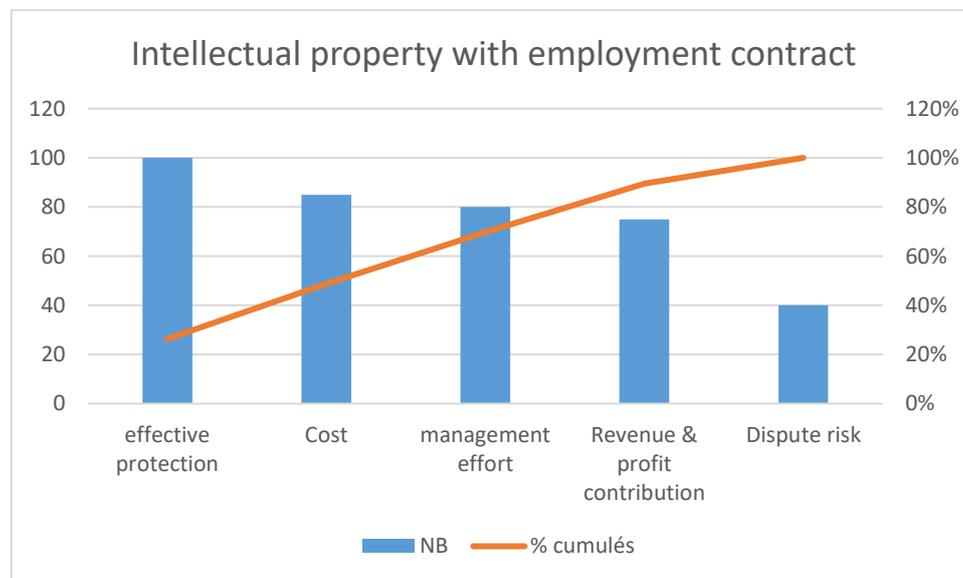
If a company does not use employment contracts to protect itself, it can be observed that this will

<sup>40</sup> Pareto Analysis Choosing the Most Important Changes to Make. (n.d.). Retrieved from [https://www.mindtools.com/pages/article/newTED\\_01.htm](https://www.mindtools.com/pages/article/newTED_01.htm)

<sup>41</sup> By Author

have a significant impact on costs. Without the protection offered by employment contracts, the company will face risks such as theft of intellectual property (for example) that will cause very costly damages to the company. The company will also expose itself to higher risks regarding intellectual property disputes (which will also impact costs at the same time). In general, this will require a significant management effort for protection that will only be effective.

Let's analyze what will be the impact of employment contracts on intellectual property and the different criteria:



*Figure 10<sup>42</sup>*

We can therefore see that through the use of employment contracts, the costs of intellectual property are lower. Indeed, this protection reduces the costs of disputes, but also the costs generated by management and alternative efforts to protect intellectual property.

We also note that employment contracts protect the IP more efficiently. Finally, this reduces the risk of disputes because the contract has a legal aspect and can reduce most disputes.

## CONCLUSION

The purpose of this research was to answer the following questions:

- Is it necessary and essential to include clauses on property rights in employment contracts?
- How do you manage the access of the intellectual property to protect your intellectual property?

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<sup>42</sup> By Author

During the analysis of these questions, and through this research, we were able to highlight the different means; namely: Employment contract, Physical & digital security, Secret trade, Label valuable IP, Encryption, Priority IP and Educate employee; to manage and protect his intellectual property. We explained how each solution worked, based on relevant criteria to evaluate and compare each alternative. Through this analysis we have identified 3 solutions as being better than the others: Employment contract, Trade secret and Encryption. We therefore took into account each criteria and evaluate their relative weight according to the chosen alternatives. This allowed us to identify the best solution to manage and protect its intellectual property, namely Employment contract.

As explained throughout this research, this solution offers the best protection as well as contribution for the company compared to the costs, the time, the effort required and the risks of disputes.

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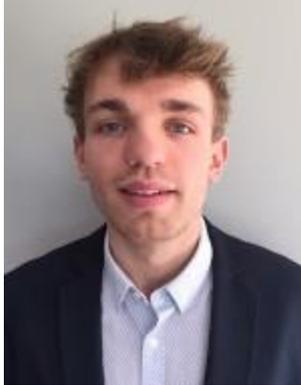
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