

LES GLOBAL DISTRIBUTION SYSTEMS (GDS), OUTIL INDISPENSABLE D'UN SYSTEME YIELD MANEGEMENT

Imene HADDAD, Maitre de Conférences, HEC

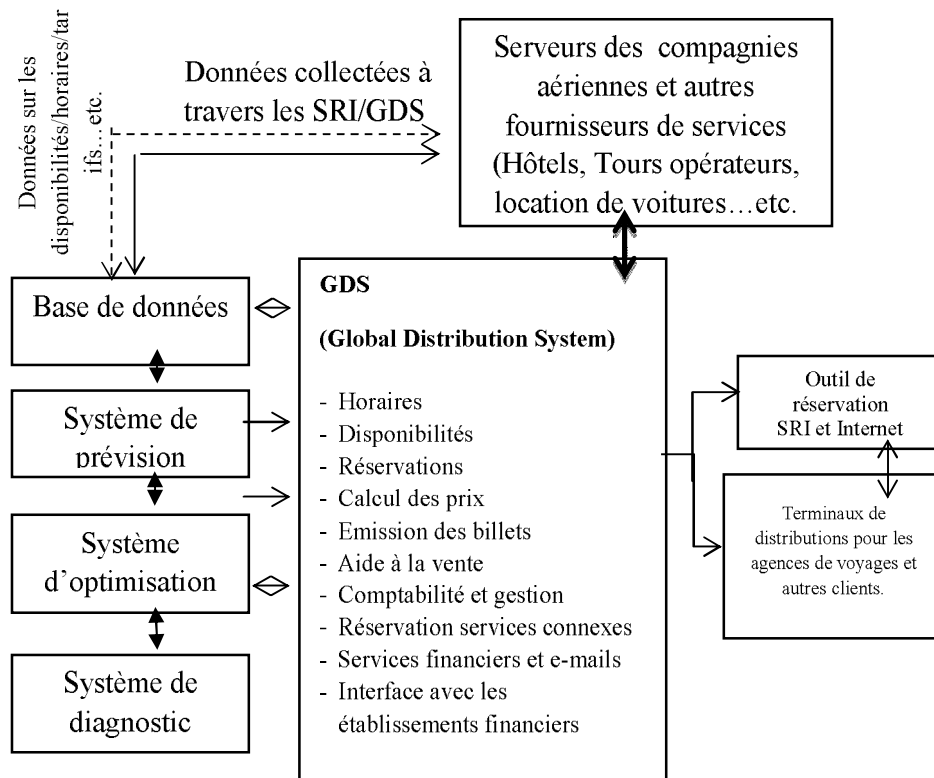
Résumé: La pérennité d'une compagnie aérienne ainsi que sa compétitivité dépend inéluctablement de sa capacité à examiner de près sa distribution et le contrôle permanent de l'activité de la concurrence sur son marché. Dans ce sens, les GDS (Global Distribution System), outil du Yield Management, s'avèrent un important canal de distribution et de veille pour les compagnies aériennes. A travers cet article, nous allons étudier leur développement, fonctionnement ainsi que leur rôle dans un système Yield Management.

Mots clés : GDS, SRI, Système Yield Management.

Introduction :

La mise en œuvre du Yield Management rend nécessaire une réorganisation des services concernées par cette fonction et l'implantation d'un système permettant la mise à disposition instantanée des informations ainsi que des modules facilitant la prise de décision. Le Schéma subséquent porte les composantes d'un outil intégré de Yield Management :

Schéma n°1: L'architecture d'un système Yield Management



Source: Farell (K) et Whelan-Ryan (F): *YieldManagement: a model for implemation, progress in Tourism an Hospitality Research*, 4 p267-277, 1995

Tel que nous pouvons le constater sur le schéma ci-dessus, les GDS sont au cœur de tout système Yield management. A travers cet article nous allons tenter d'étudier le développement des GDS ainsi que leur importance dans un système Yield Management Intégré.

1-L'avènement des GDS :

Les anciens systèmes de réservation et de distribution de billets dans le transport aérien, se présentaient principalement sous formes de points de vente physiques, où le client devait s'y rendre pour effectuer une réservation ou un achat de billet.

Ces points de ventes étaient souvent : des agences appartenant aux compagnies aériennes, des agences de voyage, des tours opérateurs...etc. Ainsi, l'agent du guichet, s'occupant de la vente des billets, n'avait aucune

habilité de prise de décision, d'accepter ou de refuser une réservation d'un client avant de s'informer auprès du centre de distribution de la compagnie en question. Afin d'obtenir l'autorisation ou pas d'effectuer cette opération, l'accord se faisait par le biais d'une communication téléphonique ou par voie de réseau téléinformatique.

Mais, souvent, les compagnies aériennes disposent d'un réseau important de distribution. Ainsi, de par, le volume de transaction trop élevé et un flux de passagers de taille, la procédure susmentionnée est jugée quasi-inefficace, d'autant plus dans un environnement caractérisé par une rivalité féroce où la réactivité devient un facteur de succès primordial.

Dans ce sens, le contingentement ; c'est-à-dire la constitution des classes tarifaires et la protection de la haute contribution, sont le cœur de tout système de Yield Management. De ce fait, pour atteindre cet objectif, les compagnies aériennes doivent mettre à la disposition des agents de vente, des informations portant le nombre de sièges disponibles par sous-classes tarifaires, et ce, à chaque fois que l'inventaire et/ou le paramétrage initial soient changés (DAUDEL, VIALLE, 1989). Ceci dit que tout acte de réservation ou d'achat de billet doit être instantanément enregistré avec le prix correspondant et actualiser les disponibilités en sièges. Pareillement, toute annulation ou modification de réservation devraient être confrontées aux réservations d'origine pour mettre à jour l'inventaire(CAPIEZ, 2003)²⁸.

Comme nous pouvons le constater, la gestion d'un tel système rend obligatoire le recours à des outils informatiques sophistiqués. Même si, l'utilisation informatique n'est relativement pas nouvelle dans le secteur du transport aérien ; en l'occurrence, les SRI (Système de Réservation Informatique) ayant vu le jour dans les années 50²⁹, ces derniers se sont révélés insuffisants, car au départ chaque compagnie disposait d'un Système de Réservation Informatique ne nourrissant que son propre réseau de distribution ne lui permettant ainsi de distribuer que seulement 45% de ses produits par le biais d'intermédiaires tels que les agences de voyages et tours opérateurs. Ainsi, les compagnies aériennes et agences de voyages ont très vite compris l'intérêt de concevoir un système global permettant d'élargir leur réseau de distribution en hébergeant plusieurs compagnies et permettant aux agences de voyage d'accéder aux inventaires des compagnies aérienne dans pratiquement un seul endroit.

De ce fait, les SIR, connectés à des réseaux de distribution externes ont permis de développer une véritable machine de vente et de pénétration

http://www.europarl.europa.eu/workingpapers/tran/105/chap3_fr.htm?textMode=on
(consulté le 16-08-2016 à 10h50)

des marchés, constituant une arme concurrentielle que l'on appelle les GDS (Global Distribution System) ou encore en français les SGD (Systèmes Globaux de Distribution).

Par ailleurs, la législation régissant ce secteur d'activité ainsi que le progrès technologique et particulièrement en informatique ont joué un rôle primordial dans le développement et l'amélioration des GDS et leur exploitation. C'est ce que nous allons aborder subséquemment.

2-Architecture et fonctionnement d'un GDS :

Tel que nous l'avons évoqué précédemment, avant l'apparition des GDS, la réservation des billets se faisait soit sur le SRI de la compagnie en question, soit par le biais d'un agent de voyage qui, d'ailleurs, devait consulter le Système de réservation de chaque compagnie séparément.

Et donc, afin d'accorder une réservation à un client, l'agent de voyage doit consulter les Systèmes de Réservation de chaque compagnie, à part, pour voir les disponibilités en sièges et les tarifs proposés par chacune d'entre elle. Ainsi, plus le nombre de SRI à consulter augmente, plus cette lente procédure devient davantage plus complexe. A cela s'ajoute la probabilité que les compagnies X, Y et Z utilisent des plates-formes différentes ce qui requiert la maîtrise de toutes ces dernières par l'agent de voyage rendant la tâche d'autant plus compliquée.

De ce fait, les compagnies aériennes ont mis en place un système plus efficace, permettant de regrouper les SRI de plusieurs compagnies dans un seul système relié directement aux différents points de vente ; il s'agit des GDS, les (Systèmes Globaux de Distribution).

L'avènement des GDS a considérablement simplifié et accéléré l'accessibilité aux informations relatives aux vols de pratiquement toutes les compagnies propriétaires ou hébergées dans un GDS. Ceci, élargi significativement le réseau de distribution des compagnies aériennes dont les données en disponibilité de sièges et tarifs, peuvent être visualisées par les agences de voyages sur une seule interface reliant même plusieurs GDS un peu partout dans le monde.

Au-delà de cette fonction, les GDS constituent un outil de gestion très efficace permettant d'un côté de gérer un flux informationnel considérable et de le mettre à la disposition de l'agent de vente instantanément, mais également, de par leur fonction statistique, ils permettent au Yield Manager de prendre une décision en temps réel.

Les GDS ont joué un rôle prépondérant dans la naissance et le développement des systèmes Yield Management, et ce grâce à leur fonctionnalités que nous pouvons résumer comme suit :

- Ils permettent la gestion d'un flux informationnel de taille pour la compagnie détentrice ou hébergées dans le GDS ;
- Ils fournissent des renseignements en instantané sur différents facteurs permettant la prise de décision en temps réel (la montée en charge des réservations, les tarifs par classes, ouverture et fermeture des classes tarifaires...etc.) ;
- Ils permettent de communiquer avec les clients en leur fournissant des informations portant l'affichage des disponibilités en sièges mais également les tarifs répondant le mieux à leurs besoins et budgets.

3-Les principaux GDS dans le monde :

Plusieurs GDS existent dans le secteur du transport aérien. Le premier GDS a vu le jour en 1964³⁰ aux Etats-Unis sous le nom de SABRE (Semi-Automated Business Research Environment). Il fut développé par la compagnie aérienne «Américan Airlines» en collaboration avec IBM, et ce, en s'inspirant des travaux de la MIT pour la création du SAGE (Semi-Automated Ground Environment) destiné au projet des Radars de la Défense Aérienne Américaine. Initialement le SABRE a été créé pour permettre à ladite compagnie d'automatiser la distribution de ses propres produits auprès de ses clients, mais, très vite cette dernière a compris l'intérêt de mettre cet outil à la disposition des agences de voyages pour augmenter sa visibilité et accroître ses parts de marché.

De par le succès du SABRE plusieurs autres GDS ont vu le jour en Amérique. Ces derniers ont même entamé une politique d'expansion dans le vieux continent à l'effet d'accéder à de nouveaux marchés. Ceci, a exhorté les compagnies aériennes Européennes à développer leurs propres GDS afin de faire face à cette concurrence.

Ainsi, au printemps 1987³¹, IBERIA, Air France, Lufthansa et SAS ont créé le premier GDS Européen sous le nom d'Amadeus, utilisant du matériel IBM et des logiciels achetés à System One*.

<https://www.sabre.com/files/Sabre-History.pdf> (consulté le 15/05/2016 à 19h50)

http://www.amadeus.com/web/amadeus/en_1A-corporate/Amadeus-Home/About-us/Our-history/1987-New-global-distribution-system/1319591612325-Page-AMAD-DetailPpal?assetid=1319593241232&assettype=StandardContent_C (Consulté le 15/05/2016 à 22h06)

* System One : un SRI développé par la compagnie Texas Air Corporation

Dans la même année, en juillet 1987, British Airways, KLM, Alitalia, Swissair ont décidé de s'associer à la filiale Covia de United Airlines pour développer un deuxième GDS Européen à partir du Système de Réservation Informatique de cette dernière « Apollo ». Le GDS en question est baptisé GALILEO.

Quant au Worldspan, ce dernier fut créé en 1990 par Delta Airlines, TWA Northwest à partir du SRI de la compagnie Delta Airlines³².

Les GDS susmentionnés sont les plus connus et donc les plus performants, car sont exploités par plusieurs compagnies aériennes de renommé et mis à la disposition d'une ribambelle d'agences de voyage situées presque partout dans le monde.

Toutefois, d'autres GDS existent sur le marché, en l'occurrence le GDS MARS appartenant à la filiale Mercator des Emirats, et d'ailleurs ce dernier exploité par la compagnie Air Algérie depuis Juin 2006 sous le nom MarsAh.

Conclusion

Les GDS ont grandement participé au développement et à l'amélioration des fonctions du marketing et de la distribution des compagnies aériennes. Aujourd'hui, ils continuent à jouer un rôle primordial constituant le cœur même de tout système de Yield Management. Toutefois, additionnelle ment au GDS le système Yield Management est composé de plusieurs modules et logiciels permettant en interaction de collecter, stocker, et traiter un tas d'information provenant des systèmes de réservation et servant à optimiser leur distribution. Ainsi, les compagnies doivent s'assurer d'avoir un site Web bien conçu et facile à exploiter pour mieux comprendre et répondre aux attentes et désirs des clients dont le comportement ne cesse d'évoluer.

32 Capiez, (A) : Opcit, p 163.

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THE EFFECTIVENESS OF INTERNSHIPS AS A KNOWLEDGE TRANSFER CHANNEL BETWEEN HIGHER EDUCATION INSTITUTIONS AND INDUSTRY

Sadek BAKOUCHE, Professor at ENSTP

Kamel BELHADJ DJILALI, Phd student, laboratory PERMANAN, HEC

Abstract: One of the most important knowledge transfer channel between HEIs and industry is the internships that do students in companies from different sectors, in this study we aim to evaluate the effectiveness of this last channel in order to find out the way to enhance the stock of knowledge of each of the actors of this operation (students, universities, companies). Finally, a case study at HEC Alger will help us to verify the different points mentioned in literature review.

Keywords: Knowledge management, Knowledge transfer, Internships, universities-industry linkages, KT effectiveness determinants,

Introduction:

There is no doubt that the increasing Economic value of knowledge explains the industry research concerns and that building a well-structured knowledge system constitute a vital factor for the economic development of any country.

In this context the relation University- Industry as mentioned in literature appears like the best way to enhance the linkages between scientific research and economic development.

We know that the concerned knowledge transfer is circulating on "a two-way bridge", a concept introduced by Meyer-Krahmer and Schmoch in 1998, which describes the transfer of knowledge between universities and companies in the field of applied research. It is therefore necessary to encourage these knowledge production systems in this partnership which allow an increase in the stock of knowledge of each of the actors.

At the international level, the opening up of the university has given rise to this cooperation which is gaining more and more momentum. Through various forms and ways, the university brings comprehensive solutions to the complex and diverse problems faced by companies and benefits through agreements and contracts on several levels: teaching, training programs professionalization, additional financial resources and internships programs....etc.

In this research paper we have been interested on the students' internships as a knowledge transfer channel between HEIs and industry. It's why the main question of our research is:

- How effective are the internships as a knowledge transfer channel between HEIs and industry?

To answer this problematic, we will first expose the theoretical framework in relation with knowledge transfer and then through a case study of HEC Alger based on a questionnaire we will evaluate the effectiveness of HEC internships by interpreting some criteria.

1. Theoretical framework of the research:

Knowledge management involves a variety of procedures and techniques used to gain more organizational knowledge.

1.1. Knowledge:

1.1.1. The definition of knowledge:

The definition of knowledge is associated with its hierarchy in the context of knowledge management. (Data, Information, Knowledge, Expertise). It goes beyond genuine information (Alavi and Leidner, 2001), it is information related to facts, judgments, ideas, observations, etc.

For Davenport and Prusak (1998), knowledge is a fluid blend of framed experience, value, contextual information and expert insight that provides a framework for assessing and integrating new experiences and new information. Organizational knowledge is Not only in documents and repositories but also in routines, processes, practices and organizational norms, tools and in the network that binds them together and represents knowledge reservoirs (Argote and Ingram, 2000).

1.1.2. The taxonomy of knowledge:

Literature differentiate between explicit knowledge and tacit knowledge:

- **Explicit knowledge** is a knowledge that can be articulated, codified and easily transferable between individuals in a systematic and formal language. Therefore, it can be defined as generalizable knowledge (Alavi and Leidner, 2001).

- **Tacit knowledge** is a "not verbalized" knowledge, intuitive and Not articulated "(Polany, 1966). It is a knowledge that resides in the human

brain and cannot be captured and diffused. It results from subjective experience, ideas and intuitions of individuals and groups (Liyanage 2009) that cannot be easily expressed and shared.

1.1.3. Characteristics of knowledge:

Zander and Kogut (1995), based on the work of Winter (1987), present five concepts to describe knowledge characteristics:

- **The degree of knowledge codifiability** refers to the number of barriers to transform tacit knowledge into explicit knowledge. This is the degree to which knowledge can be verbalized, written, drawn or otherwise articulated (Bresman and others., 1999).

- **Teachability** refers to the question of whether or not to form individuals by Knowledge, ie the training of individuals can be done through work (learning through practice in the workplace) or outside.

- Simonin (1999) refers the **complexity of knowledge** to the number of technologies, routines, Individuals and knowledge-related interaction resources.

- **Observability** in the product encompasses the characteristics of the product that make it vulnerable to imitation by competitors.

- Finally, **the dependence** of a system refers to dependence on the product, Users and professionals related to the use of knowledge in its environment. This dependence increases when knowledge is integrated into components such as individuals or organizational routines.

1.2. Knowledge management :

1.2.1. Definition of knowledge management:

The literature gives several definitions of knowledge management, here we address the definitions, in order to meet a precise objective that is to identify and better understand the transfer of knowledge, and to place it within the preoccupations of the management in the organization.

The knowledge management refers to how the organization creates, conserves and shares knowledge (Huber, 1991). It is also defined by Jashapara (2004) as the effective learning process associated with the exploration, exploitation and sharing of human knowledge (tacit and explicit), using appropriate technology and cultural environments to improve Intellectual capital and ultimately the performance of the organization.

1.2.2. The Organizational Knowledge Creation Process:

The process of creating organizational knowledge is based on five steps:

- *The broadening of individual knowledge*: on the basis of the variety of experiences, commitment and quality of knowledge produced in experience, individuals develop tacit knowledge;

- *The sharing of tacit knowledge and conceptualization* through the creation of places of interaction and a climate of mutual trust, the sharing of experience and the generation of a common perspective are promoted, which transform tacit knowledge into explicit knowledge;

- *Crystallization* consists in giving a durable and concrete form to the created knowledge;

- *The justification* consists of establishing Standards of knowledge evaluation and to judge its usefulness for the organization;

- Finally, *knowledge networking* consists in identifying and incorporating new knowledge in the knowledge base of the organization.

1.3. Knowledge transfer

1.3.1. Definition of Knowledge Transfer

The literature offers a variety of definitions for knowledge transfer, Kumar and Ganesh (2009) define the concerned transfer like "a process of exchange of tacit and explicit knowledge between two agents, during which an agent receives and uses knowledge provided by another. The agent in this case refers to an individual, group, unit, organization or cluster".

According to Van den Hooff and De Ridder (2004), the Knowledge transfer involves either actively communicating to others what is known, or actively consulting others to learn what they know. Finally, knowledge transfer can take place within the organization (intra-organizational transfer of knowledge) or between organizations (inter-organizational transfer of knowledge).

1.3.2. Inter-organizational knowledge transfer:

The inter-organizational transfer of knowledge is essential and critical for the survival of organizations. There will be a knowledge inter-organizational transfer when a specific knowledge is transmitted from one organization to another. For Easterby-Smith (2008), knowledge is not always developed in the organization. It is important that the organization has the ability to learn from others in order to compete. Similarly, Van

Wijki (2008) argue that the transfer of knowledge from external actors has become central to the success of the organization.

Vaara (2010) define the inter-organizational transfer of knowledge as the beneficial use of knowledge, skills and abilities that originate from another organization. The inter-organizational transfer of knowledge is considered essential to improve Efficiency, and productivity.

1.3.3. Successful transfer of knowledge:

The definition of knowledge transfer success is not unanimous in the literature. It is defined as the number of knowledge transfers committed over a period of time. Similarly, Schulz (2001) states that it depends on the overall volume of know-how and information transmitted per unit of time. A second approach is based on the project management literature, and defines the success of knowledge transfer as a timely transfer within the allocated budget that produces satisfaction in the recipient. A third approach is offered by Easterby-Smith (2008), which determine the success of knowledge transfer by changing the knowledge base, level of innovation and improvement of individual performance in the receiving actor of transfer. Finally, a final approach has been proposed by Perez-Nordtvedt who see the success of knowledge transfer in terms of the efficiency and effectiveness of knowledge transfer. The effectiveness of knowledge transfer is the degree of understanding and the usefulness of knowledge that has been transferred to the receiver by the transmitter.

1.4. Universities -Industry knowledge transfer:

Nowadays U-I knowledge transfer is commonly understood as a broad concept identifying a wide set of interactions between firms and universities that are aimed at the exchange of knowledge related to research, science and technology (Agrawal,2001). These include: *employment channels; intellectual property rights; research and training collaboration.*

1.4.1. Definition of Internships

Internships are defined as “a form of on-the-job training in which people gain supervised experience and practical knowledge that is relevant to a specific field”(Patton & Dial,1988).

According to American Institute of Certified Public Accountants (2006), internship is "work experience in industrial, business, or government work situations that leverages the class guidelines experience through practical work experience. “Being a valuable component of higher education academic program, Internship is believed to create win-win situation for the students, organization as well as the university”.

1.4.2. Internship Effectiveness:

Several constructs are used to evaluate internship effectiveness, including development of Career skills and Career focus.

a) Career skills

Four categories of preparation skills are found to be of great significance among hiring criteria, they include:

Table 01: Career skills

Academic skills	Analytical skills, computer applications, creative thinking, information search, and problem solving.
Communication skills	Oral communication, written communication, proposal writing.
Interpersonal skills:	Leadership/teamwork and relationship building.
Job acquisition skills:	Resumes writing, job interviewing, and job networking.

Adapted by us

b) Career focus

Career focus includes the recognition of the personal valued, work-related outcomes and the vocational abilities and interests needed to attain satisfaction from the work. Some studies argue that students with internship experience reported a greater sense of responsibility and career development. It is also suggested in the literature that career focus is associated with positive belief about intern's career choice and future job satisfaction. In addition, interns who enjoy a successful internship experience feel positive changes in personal and social efficacy and career self-efficacy (Braswell, C.M.C., & Cobia, D. 2000).

1.4.3. Determinants of Internship Effectiveness

The competency and motivation of all parties involved are indispensable for a successful internship programs (Coco, 2000). Eight predictors of internship effectiveness are suggested in the literature, including three individual factors: (1) academic preparedness, (2) positive attitude, (3) self-initiative and three organizational factors: (4) challenge job, (5) autonomy, (6) effectiveness of supervision.

2. Case study: The Effectiveness of HEC Alger internships:

At HEC Alger students have to do internships each year of their master level years, what we want is to evaluate the effectiveness of these internships

2.1. Methodology:

This study was a quantitative study attempting to identify and evaluate the determinants of internship effectiveness. A descriptive study was conducted where internet-based questionnaire was used. It was distributed to 30 student interns in HEC Alger business School.

a- Questionnaire design:

The questionnaire is composed of three sections, the first one aims at describing the interns and the internships, whereas the second section has as an objectif to evaluate the internships according the effectiveness determinants that we exposed in the theoretical part of this paper. The last part is to find out the effects of internships on the interns profiles and their future jobs selection.

b- Results presentation :

According to the given answers, we can say that internships that do HEC Alger students differs in terms of period and field (the students are free to choose the sufficient period of internships and the best place where they can learn better)

The determinants of the internships effectiveness:

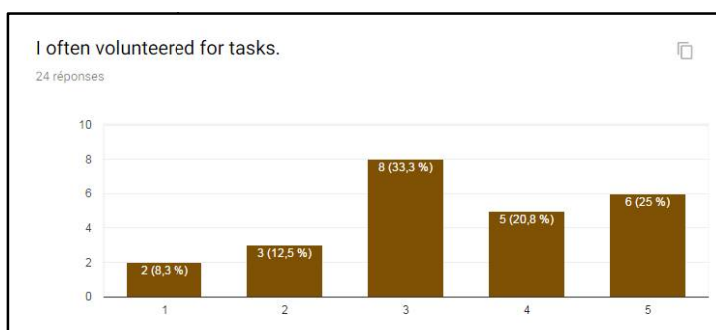
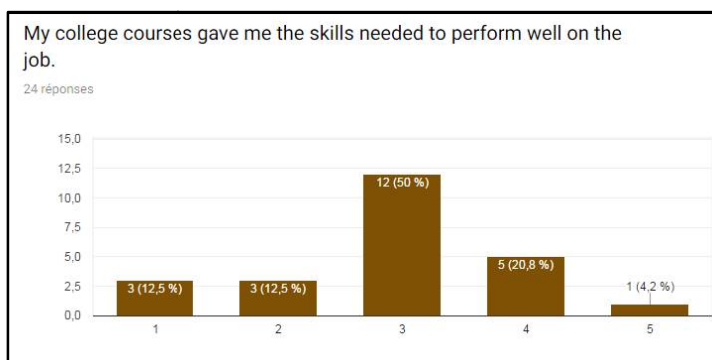
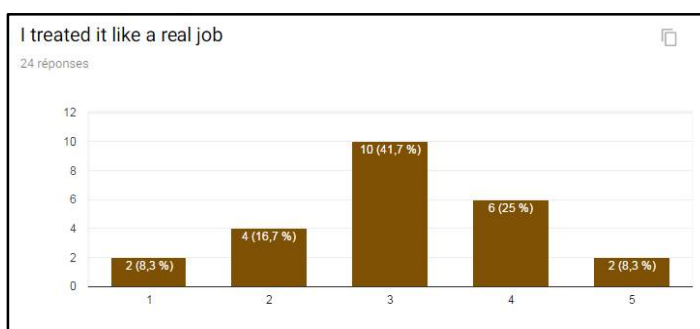
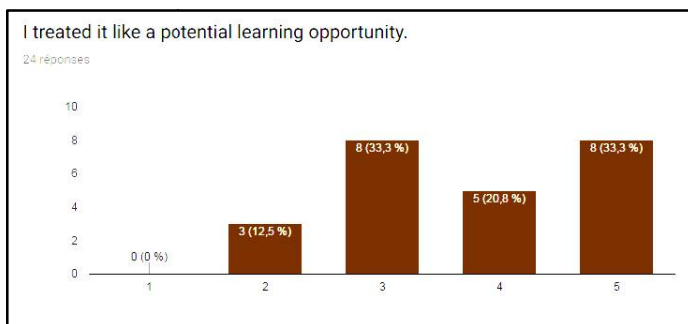
- Individual factors:

(1) Academic preparedness,

The students that we asked think that the knowledge built in HEC prepared them to succeed the internship with an acceptable average.

(2) Positive attitude:

When we tried to evaluate their Behavior, we found that they have an Acceptable preparedness in terms of professional attitude, they treat the internship as a great learning opportunity even if it's not like a real job according to their answers.



(3) Self-initiative :

Most of them agree that they need to make initiatives to get their learning objectives, they volunteer for tasks and ask questions when they don't understand.

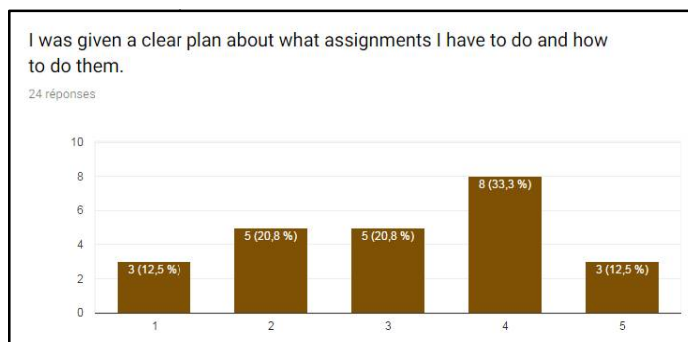
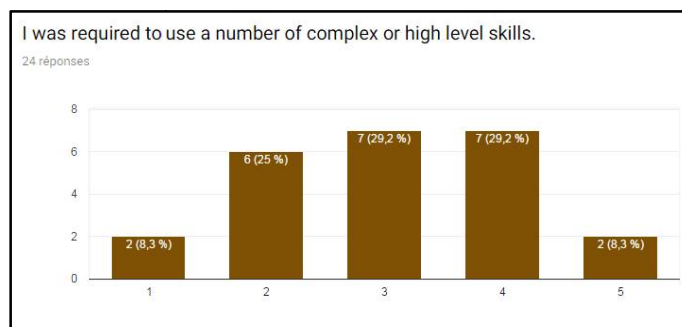
- Organizational factors:

(4) Challenge job:

Because internships are not like permanent job and because its objective is to learn and discover the world of companies, we noticed that the given answers prove that internships are not repetitive actions like classical job but when talk about the complexity degree that interns need to perform better, they exposed intermediary complexity level justified with the no previous experience (new job is always complex in the beginning).

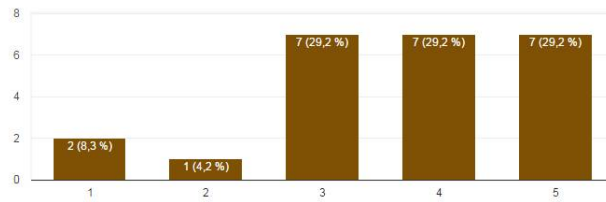
(5) Autonomy:

When asked about their autonomy we noticed that not all the interns had it, it depends on the culture and the size of the company, not all companies integrate students easily in the job and give them the space they need to work freely.



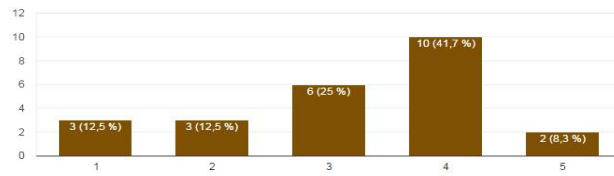
I proactively asked questions.

24 réponses



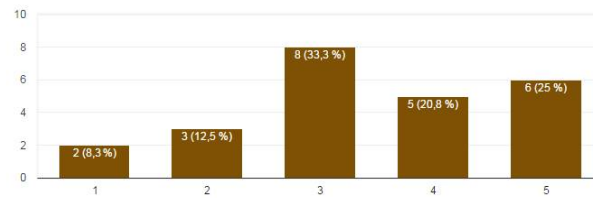
The job was quite simple and repetitive.

24 réponses



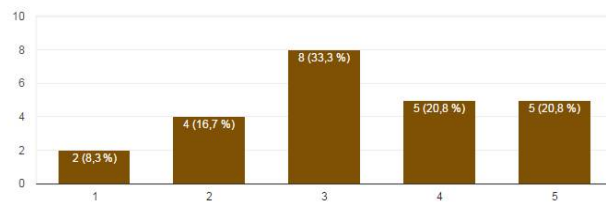
I often volunteered for tasks.

24 réponses



My supervisor considered my interests and goals and adapted the internship accordingly.

24 réponses



(6) Effectiveness of supervision:

The average of the students declare that supervisor affects directly the effectiveness of the internship and also the improvement of the interns' performance. The supervisor can evaluate the performance of the students in the internships and give them the right advice to improve it.

When asked about the developed skills almost the answers differ according to the type of the competency and the company:

- Analytical skills, leadership skills: not all the students had the opportunity to develop them.

- Computer application, problems solving, information search, team work, oral communication and Written communication: those competencies were better developed compared the first range.

- Whereas when talking about networking skills and innovative thinking it was intermediary improved.

Finally, the interns develop an idea about what kind of job they want in the future once in function of the internships effectiveness.

Conclusion:

The implication of this study is that internship success is determined by both individual factors and organizational factors. By focusing on the case study of HEC Alger, we can suppose that the way HEC internships are acceptable in terms of learning outcomes.

Many advices can be given to students to perform better in their internships: 1) *be prepared before internship* (theoretical knowledge). 2) *Be positive about the internship* (Internship should be treated as a potential learning opportunity and a real job. 3) *Be proactive during the internship* (Take the initiative to ask for tasks and questions and feedbacks). It is especially helpful when the supervisor does not provide adequate opportunities, since it becomes the only way to gain more meaningful understanding of work outside the monotonous tasks.

Based on the quantitative results, two recommendations are developed for the employers: 1) Provide sufficient supervisory support to intern to enhance career skills and career goals. 2) Develop a systematic plan of the internship program.

Annexes:

https://docs.google.com/forms/d/e/1FAIpQLSfxU2IG7Mkb_GvJTz7st5udSz_P8ASr-5tlwZfBOvemVOsXfw/viewform?usp=sf_link

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