Disruptive Technologies
Kedge Winter School 2020
Course Code: WIN-XX-STR-01-E-L-PRS

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OFFICE HOURS	Upon Appointment
CLASSROOM(S)	Kedge Paris Campus - Room 3B
COURSE HOURS	See Course Timetable

COURSE DELIVERABLE	DUE DATE	WEIGHT ON FINAL GRADE
Case Study (Group presentation)	Session 7	40%
Multiple Choice Exam (Individual exam)	Session 8	60%

INTRODUCTION AND OBJECTIVES

Course Purpose & Objectives

Recent technology disruptions have created an increasingly competitive situation in an increasingly open and complex environment. A company's ability to quickly change direction and reconfigure its strategy is critical to its success in achieving a sustainable competitive advantage. It must not only be able to continue producing throughout these changes, but also constantly renew its products while maintaining the level of products quality, price, TTM, acceptable deadlines and good customer service.

Business leaders worldwide frequently lack information needed to make critical decisions. They do not have access to information required to close information gaps and reach business objectives. But how do companies acquire critical characteristics and use them to achieve business objectives?

Today technology disruption is helping organizations, in every industry, use information for creating business advantages. It is helping them meet growth objectives, create competitive differentiation, manage costs, make choices about what markets to pursue, configure their organisations appropriately, set prices, and make operations more effective and efficient.

Course contribution to program objectives

By the end of this course, students should be able:
  ➢ To have a much better understanding of disruptive technologies, from the perspectives of technology, intelligence and business, including: Big Data, Cloud Computing, Data Analytics, Artificial Intelligence and Blockchains
  ➢ To understand the steps in the transformation of data collection to decision making.
  ➢ To develop a roadmap to conduct transformation, delivering business-value through technology disruption.

Course description

This course is designed to enable (future) managers to understand the power of technology disruption, what can be achieved and how. With the Digital Enterprise and technology disruption, several new disciplines have emerged: Big data, Data Governance, Data Analytics, Business Intelligence, Mobility Technologies, Cloud Computing, IoT, Artificial Intelligence, Machine Learning, Blockchains, etc. One subject is common to all of these trends: Data. To take advantage of the intelligence created by the collection of Data, we need a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information so as to enable more effective strategic, tactical, and operational insights and decision-making. The objective of this course is to find out how disruptive technologies can help companies and managers increase speed, agility and improve the timing for successful manoeuvers.

COURSE MATERIAL

Recommended reading

1. Siebel T. M. *Digital Transformation: Survive and Thrive in an Era of Mass Extinction.* RosettaBooks, 2019

2. Kotusev, S. *The Practice of Enterprise Architecture: A Modern Approach to Business and IT Alignment.* SK Publishing, 2018

3. Kleppmann, M. *Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems.* O'Reilly Media, 2017

4. EMC Education Services. *Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data.* Wiley, 2015

5. Inmon, W.H.. *Data Architecture: A Primer for the Data Scientist: Big Data, Data Warehouse and Data Vault.* Morgan Kaufmann, 2014

Additional articles and case studies will be provided in advance and during the course.

COURSE CONTENTS AND TIMETABLE
The following table presents the "typical" agenda for each session. The order of the studied topics as well as the time allowed for each topic may vary according to the needs and background of the participants. Consequently, eventual shifts of time allocation will not prevent participants from achieving course objectives. All course sessions will be delivered by Professor Makhlouf and will be held in Room 3B at the Kedge Paris Campus.

Session	Date	Time	Topic	Core Readings
1	06/01/2020	10:00 - 13:00	Introduction - Organization of the course - Topic orientation & context - Project groups creation - Assessment rules Understanding Innovative Technologies : - Data Science - Big Data - Artificial Intelligence, - Machine Learning, - Block chains, - IoT, - Cloud Computing, - Data Governance, - Data visualization	Readings and case studies provided by the professor

2	06/01/2020	14:00 - 17:00	Case Study - Innovative Technologies Frameworks - Installing and Configuring Frameworks for Big data, Artificial Intelligence, Machine Learning, Data Visualization, etc. - Overarching End to End Transformation with Innovative Digital Technologies - Case Study Presentation, Analysis and Objectives	Readings and case studies provided by the professor
3	07/01/2020	09:00 - 12:00	End to End Digital Transformation: - Enterprise Architecture - Modelling End to End Digital Transformation Enterprise Architecture - Transforming Enterprise Architecture by implementing Innovative Technologies	Readings and case studies provided by the professor
4	07/01/2020	13:00 - 16:00	Case Study : - Modelling End to End Digital Transformation Enterprise Architecture - Transforming Enterprise Architecture by implementing and Innovative Technologies	Readings and case studies provided by the professor
5	08/01/2020	09:00 - 12:00	Understanding Data Science : - Data and Data visualization - Machine Learning, Deep Learning and Neural Networks - Artificial Intelligence - Block chain in Business - IoT (Internet of Things)	Readings and case studies provided by the professor

6	08/01/2020	13:00 - 16:00	Case Study **(Practical work)** Data Science (Big Data, Machine Learning, Data visualization)	Readings and case studies provided by the professor
7	09/01/2020	09:00 - 12:00	Case Study **(Practical work)** Artificial Intelligence, Deep Learning and Neural Networks	Readings and case studies provided by the professor
8	09/01/2020	13:00 - 16:00	Wrap Up: - Multiple choice exam - Case Study Group Presentations	

TEACHING APPROACH/ INSTRUCTIONAL METHODS

A Word of Advice

This course is based on active learning/teaching principles. This approach markedly improves student knowledge acquisition by shifting the traditional teaching and learning roles. In this class students will be expected to have completed the reading and preparation prior to each class session. In class, students will be responsible for teaching others what they have learned via small group interactions and in team-based projects. The classes are designed to be highly interactive, with learning enhanced through discussion and interactions amongst members.

EVALUATION OF STUDENT PERFORMANCE:

DELIVERABLE	*Weight on final Grade*	*Assessment Criteria*
Multiple Choice Exam	**60%**	Correctly answer the questions on the core concepts introduced in sessions 1- 7. The exam must be completed individually.
Case Study (Group Presentation)	**40%**	Participants will be evaluated based on their contribution to the group throughout the programme as well as the presentation given on the final day.

Case Study Group Presentation (40%)

The course will emphasize collaboration and teamwork. Participation is absolutely required. Teamwork in a classroom teaches students the fundamental skills associated with working as a collective unit toward a common goal. This type of teamwork introduces a variety of skills that will be valuable for students later in the workforce, such as communication, compromise and collective effort. Students will work together to develop a presentation summarizing the key learning points of the case studies conducted in class.

Multiple Choice Exam (60%)

Students have forty-five minutes to complete the exam at the end of the last course session. For each question, there are three to four answers proposed. Only one answer is correct. Students are expected to read the questions carefully and choose the appropriate answer, demonstrating acquisition of the knowledge and understanding of concepts expanded upon during the classes.

PROFESSOR BIOGRAPHY

Mohamed MAKHLOUF has extensive managerial experience in some of the largest European companies in the telecommunications financial and industrial sectors. Prior to joining KEDGE Business School in 2013 as Management Information Systems Professor, he was Advisor to the President of the Tunisian Republic. He holds a degree in Computer Sciences Engineering from the National Engineering School of Computer Sciences, an MSc in Management of Information Systems, a Research Master in Mathematics, Computer Sciences and Humanities, and a PhD in Management (Unification of Governance) from Mines-Telecom Institute, in Paris, France. He has published numerous papers in top-ranked academic journals, and delivered his work at several international conferences. His research is cross-disciplinary in the fields of: Management, Computer Sciences, Organization and Business Engineering, Behavioral Science and Design Science. His Overarching Research project is the development of End-to-End Digital Transformation Framework, unifying Governance in a holistic view of the organization, with a Strategic Alignment purpose, based on Artificial Intelligence, Block Chain, Big Data, and Innovative Technologies based Enterprise Architecture.

ACADEMIC FRAUD

Definition

Academic fraud is a breach of ethics.

"Is achieved using unfair means or deception, to obtain material or undue moral advantage, or with the intent to avoid the enforcement of laws". (Translated from the original source: Dictionnaire Juridique des Lois, 2010, available at: www.dictionnaire-juridique.com/definition/fraude/php)

Plagiarism consists of attributing authorship by (partial or total) copying, imitation or misappropriation.

The act of fraud is committed by one or more students/participants when they:

- appropriate written or oral work to themselves when they are not the author (in whole or in part) of the work, by omitting any references or quotations to the author or to the owner of the work;
- present any data that has been falsified or invented in any way;

- use the identity of the author, attributing the contents of and/or a resource to him/her, but without explicitly mentioning that they are not the author;
- appropriate the creative work of someone else and present it as their own;
- acquire excerpts of texts, images, results etc. from external sources by including them in their own work without mentioning the origins of the exerts;
- summarise the original idea of an author by expressing it in their own words but omit quoting the source;
- cheat in an academic evaluation;

Plagiarism can occur in:

- an academic article or book;
- an exercise or a case study;
- a study or a report;
- a dissertation or a thesis;
- any document of which the student/participant is not, but purports to be the author.

Sanctions

Any student/participant having committed academic fraud, or having participated in it, will be sanctioned by the professor in charge of the course. The professor can apply 1st and 2nd level sanctions (detailed below). The professor will send a copy of the sanction to the student's/participant's programme. The student/participant will be informed/and or convoked by the programme director (or his/her representative) to a hearing prior to the possible convening of the Euromed Management Disciplinary Council. In the case of a hearing of the Disciplinary Council, they can decide to apply 3rd and 4th level of sanctions.

Any student/participant guilty of academic fraud will receive one of the following sanctions:

- Applied by the professor in charge of the course, Euromed Management faculty member (1st and 2nd level):
  - A grade of zero for the work concerned and a formal warning;
  - A grade of zero for the course or module concerned and a formal warning.
- Applied by Euromed Management Disciplinary Council (3rd and 4th level):
  - Suspension from the programme for one or two semesters;
  - Exclusion from the programme.

N.B.: Plagiarism within a partner institution can result in these sanctions being applied by Euromed-Management, notwithstanding partner's decision.