

Indian Institute of Management Udaipur

Course Outline – MBA GSCM

Course name	Digital SCM (DSCM)		
Program	One Year MBA – Global Supply Chain Management	Core/Elective	Core
Credits	4	Cap (if elective)	
Academic Year	2023-2024	Term	II
Course Coordinator		Email	

Instructor 1	Dr. Kaushik Ghatak	Email	kaushik@valueqwest.com
Sessions	20	Section	
Affiliation			
Office Hours			

Course description

For companies operating in today's globalized world managing supply chains effectively is a key winning criterion. The leaders are developing better and more innovative ways to design, manufacture and distribute products and services through its own as well as its extended supply chains of trading partners. Digital Technology is increasingly playing a mission critical role in this very physical and virtual world of complexity. They are helping companies plan, execute and monitor operations, take actions to proactively outperform their competition, and in several cases becoming the winning card in helping design new supply chain capabilities. This course gives an exhaustive view of the state of the art of digital technologies prevalent in today's supply chains.

Any discussion on digital technologies cannot be in isolation of the impact it makes to the business. Hence, this course will also provide a high level of understanding of business value of digital technologies as related to supply chain management.

This is an integrative course that connects business strategy, process analysis, digital capability development requirements, capital budgeting, project management and change management concepts to develop a clear framework and process for discovering the value potential of digitalization and ensuring value realization from investments in digital technologies.

Course Objectives

By the end of this course, students will be able to understand the key digital technologies supporting the supply chain management function in today's environment. They should also attain a good level of understanding of emerging technology applications in supply chains and how future digitalized supply chains would look like.

Specific learning objectives for the participants in this course are as follows:

1. Demonstrate a clear understanding of the different digital applications supporting the various business functions in an end-to-end supply chain, viz. sourcing, manufacturing, warehousing and transportation, product life cycle management and supply chain planning
2. Demonstrate a clear understanding of how new disruptive technologies such as Big Data, Analytics, IoT, AI, Cloud and social media are creating challenges for IT and Supply Chain alignment, as well as creating new opportunities for better performance
3. Demonstrate a clear understanding of how digital technologies help in making supply chains more resilient, agile, and sustainable
4. *Demonstrate* a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital technologies in supporting business
5. *Apply* the methodologies and tools of Value Discovery and Value Realization in developing business cases
6. *Identify and construct* a business case for a digital transformation program for the supply chain function of an organization

Key Takeaways: At the end of this course, students should be able to understand

1. Criticality of digital technologies in making supply chains more resilient, agile, and sustainable
2. Use cases for emerging disruptive technologies in the supply chain domain such as Analytics, AI/ML, Blockchain etc.
3. The need to align Digital strategy with business strategy, and assess, in clear terms, the tangible and non-tangible benefits that digital technologies can bring

Programme Level Learning Goals

The course aims to help students achieve the following learning goals (those which are applicable):

Goal 1: Ability to integrate across business disciplines: Students should be able to apply frameworks from different business disciplines.

- Identify and make connections across functional areas when looking at a business problem.
- Identify and apply concepts from multiple-functional areas comprehensively to a business problem

Goal 2: Critical Thinking: Students should be able to identify and analyze key issues and evaluate alternative solutions.

- Identify the relevance and importance of issues. Accurately identifies the core issue.
- Provide solutions by integrating ideas and using the available evidence.

Goal 3: Team Dynamics: Students should be able to work as part of a team.

- a. *Contributes outside of team meetings:* Provide solutions by integrating ideas and using the available evidence. Completes all assigned tasks by deadline; work accomplished is thorough and comprehensive.
- b. *Contributes to team meetings:* Helps the team by articulating the merits of alternative ideas or solutions. Offers thoughtful and constructive ideas and suggestions. Actively builds on ideas of team members. Articulates merits of alternative ideas and suggestions.

- c. *Facilitates the contributions of team members*: Engages team members to facilitate their interaction and constructively builds upon their contribution. Encourages others to participate and complete assigned tasks to a similar level of excellence.

Goal 4: Communication Skills (Oral): Students should be proficient in oral communication.

- a. *Clarity*: Argument effectively and efficiently conveyed; highly focused on the question; easily understood.
- b. *Organization of ideas*: Coherent, comprehensive, and well-structured organization of ideas.
- c. *Style*: Confident, enthusiastic about the topic and engages the audience in discussion.

Goal 5: Communication Skills (Written): Students should be proficient in development of analytical, synthetic, and writing skills.

- a. *Clarity*: Argument is effective, concise, and easily understood. Thorough analysis of the data with compelling conclusion.
- b. *Organization of ideas*: Coherent, well integrated, clear and structured organization of ideas..
- c. *Style*: Writing style is appropriate for the topic and target audience.

Goal 6: Domain Expertise: Students should be able to develop and manage the deployment of supply chain management solutions

- a. *Defines the problem statement* - clearly and unambiguously
- b. *Identifies the data required*- Data requirement is clearly and comprehensively defined
- c. *Applies appropriate concepts to the problem*- Identifies relevant concepts and is able to apply them suitably in the context
- d. *Analyses the data to come to meaningful conclusions*- Analyses the data using appropriate techniques and interprets the findings with a practical lens
- e. *Provides practical solutions to the problem* -Participates in evaluation of solutions and uses a structured approach to finalizing the solution

International components of the course (if any)

Completely focused on global supply chain management, using case studies of digital supply chain implementations across a wide range of global companies.

Pre-requisites

List prerequisites for the course (if any)

None

Required Text Book(s):

None

Optionally Recommended Text Book(s)

1. "Digital supply Networks : transform your supply chain and gain competitive advantage with disruptive technology and reimagined processes". Sinha, Amit, Bernardes, Ednilson, Calderon, Rafael.
2. "SCM 4. 0 : supply chain management in the digital age". Hofmann, Erik, editor

Pedagogy

- Mix of Lecture and Case Analysis to develop the foundational understanding of the core concepts
- Guest lecture sessions with Supply Chain and IT practitioners in the field to understand how IT in Supply Chain is being deployed in practice and how decision makers in today's companies are viewing the IT Supply Chain interface.
- Reading of certain recommended cases and articles to help emphasize the core concepts.

Course Pack Distribution to students

CASE AND RECOMMENDED READINGS

1. Digital Transformation at GE: What Went Wrong? Robert D. Austin, Genevieve Pelow, IVEY Publishing, HBSP, Product #: W19499-PDF-ENG
2. Tetra Pak: A Digitally Enabled Supply Chain as a Competitive Advantage, Ralf W. Seifert, Richard Markoff, HBSP, Product # IMD960-PDF-ENG, HBSP
3. Dell: Roadmap of a Digital Supply Chain Transformation. Maria Jesus Saenz, Inma Borrella, Elena Revilla, IVEY Publishing, HBSP, Product # W24797-PDF-ENG

ARTICLES:

1. "Digital Doesn't Have to Be Disruptive", Nathan Furr, Andrew Shipilov, HBR Article
2. "The case for Digital Reinvention", Jacques Bughin, Laura LaBerge, and Anette Mellbye, McKinsey Quarterly
3. 4 Lessons from Levi's Digital Transformation, Harmit Singh, HBR Article
4. Don't Confuse Digital With Digitization, MIT Sloan Management Review - <https://sloanreview.mit.edu/article/dont-confuse-digital-with-digitization/>
5. "How Smart, Connected Products and transforming competition", Michael E. Porter and James E. Heppelmann, HBR Article
6. "A Manager's Guide to Augmented Reality", Michael E. Porter and James E. Heppelmann, HBR Article
7. "Monetizing car data – new service business opportunities to create new customer benefits" – McKinsey Quarterly Article

Technology enabled learning component for your course

None

Class Preparation, Participation, and Presentation

This course will be delivered through a mix of Lecture sessions, Class Discussions, Case Analysis and Presentations. A high-energy learning environment will be created and full participation from all students (physical and mental presence) is desired and required.

Class Participation

Participation is a central part of the learning process for you and your classmates. When you contribute, you help others learn. Your participation mark reflects your contribution to your classmates' learning. Active and quality participation is encouraged and will be rewarded.

Group Case Write-ups

There will be three case write-ups for this course. The objective of this set of cases is to help you apply the theoretical concepts and frameworks you learnt in the class to real life business environments. Your outputs will be graded based on the depth and breadth of your analysis of the case questions and your ability to synthesize theories and concepts to arrive at the set of recommendations.

Group Project Research – Digital Technologies Business Case

The objective of the project is to allow you to conduct research in a particular area relevant to aligning Digital Technologies with Supply Chain priorities. You will be required to do the following:

1. Choose a publicly held company in an industry (should be supply chain intensive) of your choice
2. Conduct research to understand its business environment, financial performance, supply chain structure and priorities.
3. Develop a clear plan (a roadmap) of Digital capability development.
4. Develop a comprehensive business case, as a board level presentation to justify investments to enable your Digital roadmap.
5. Develop a comprehensive transformation plan, that ensures value realization of your business case

Session Plan

Session no.	Topic	Intended Learning Outcome	References/Material
1	<ul style="list-style-type: none">• Introduction to Industry 4.0• Digitalization vs Digitization• Digital Technologies and Business / Supply Chain Alignment	<ul style="list-style-type: none">• Demonstrate a clear understanding of the different digital applications supporting the various business functions in an end-to-end supply chain, viz. sourcing, manufacturing, warehousing and transportation, product life cycle management and supply chain planning	<ul style="list-style-type: none">• “The case for Digital Reinvention” - McKinsey Quarterly Article• “How Smart, Connected Products and transforming competition - HBR Article• “A Manager’s Guide to Augmented Reality” – HBR Article
2	<ul style="list-style-type: none">• Business Capability Requirements:<ul style="list-style-type: none">○ Risk Management / Resilience	<ul style="list-style-type: none">• Demonstrate a clear understanding of how digital technologies help in making supply chains more resilient, agile, and sustainable	<ul style="list-style-type: none">• “The case for Digital Reinvention” - McKinsey Quarterly Article

	<ul style="list-style-type: none"> ○ Agility ○ Flexibility ○ Sustainability ● New Paradigms and Models - Supply Chain Networks 		<ul style="list-style-type: none"> ● “How Smart, Connected Products and transforming competition - HBR Article ● “A Manager’s Guide to Augmented Reality” – HBR Article
3	<ul style="list-style-type: none"> ● Case Analysis 	<ul style="list-style-type: none"> ● Apply the concepts learnt to analyse the digital transformation case at GE 	<ul style="list-style-type: none"> ● HBR Case: Digital Transformation at GE: What Went Wrong?
4	<ul style="list-style-type: none"> ● Disruptive Technologies in Supply Chain <ul style="list-style-type: none"> ○ Big Data and Analytics ○ AI / Robotics ○ AR / VR 	<ul style="list-style-type: none"> ● Demonstrate a clear understanding of how new disruptive technologies such as Big Data, Analytics, IoT, AI, Cloud and social media are creating challenges for IT and Supply Chain alignment, as well as creating new opportunities for better performance 	<ul style="list-style-type: none"> ● “Big Data: The Management Revolution” - HBR Article ● Topical readings as prescribed during the course
5	<ul style="list-style-type: none"> ● Case Analysis 	<ul style="list-style-type: none"> ● Apply the concepts learnt to analyse the digital transformation case at TetraPak 	<ul style="list-style-type: none"> ● HBR Case: Tetra Pak: A Digitally Enabled Supply Chain as a Competitive Advantage
6	<ul style="list-style-type: none"> ● Disruptive Technologies in Supply Chain <ul style="list-style-type: none"> ○ Cloud Models ○ Blockchain ○ Adaptive Manufacturing 	<ul style="list-style-type: none"> ● Demonstrate a clear understanding of how new disruptive technologies such as Big Data, Analytics, IoT, AI, Cloud and social media are creating challenges for IT and Supply Chain alignment, as well as creating new opportunities for better performance 	<ul style="list-style-type: none"> ● Topical readings as prescribed during the course
7	<ul style="list-style-type: none"> ● Disruptive Technologies in Supply Chain – Specific Industry Examples <ul style="list-style-type: none"> ○ Retail ○ Consumer Products ○ Automotive 	<ul style="list-style-type: none"> ● Demonstrate a clear understanding of how new disruptive technologies such as Big Data, Analytics, IoT, AI, Cloud and social media are creating challenges for IT and Supply Chain alignment, as well as creating new opportunities for better performance 	<ul style="list-style-type: none"> ● “Monetizing car data – new service business opportunities to create new customer benefits” – McKinsey Quarterly Article ● Topical readings as prescribed during the course
8	<ul style="list-style-type: none"> ● Guest Lecture Session 1 	<ul style="list-style-type: none"> ● Relate theory and case studies to practical industry examples 	
9	<ul style="list-style-type: none"> ● Guest Lecture Session 2 	<ul style="list-style-type: none"> ● Relate theory and case studies to practical industry examples 	
10	<ul style="list-style-type: none"> ● Guest Lecture Session 3 	<ul style="list-style-type: none"> ● Relate theory and case studies to practical industry examples 	
11	<ul style="list-style-type: none"> ● Why Value Digital Technologies? ● Understanding Value parameters <ul style="list-style-type: none"> ○ Cash Flow and ROIC ● Links between Strategy, Process and Technology 	<ul style="list-style-type: none"> ● <i>Demonstrate</i> a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital technologies in supporting business 	<ul style="list-style-type: none"> ● Instructor prepared class notes and Case study

12	<ul style="list-style-type: none"> • Value Discovery using Case Analysis <ul style="list-style-type: none"> ○ The science and art of value discovery ○ Identifying value drivers 	<ul style="list-style-type: none"> • Demonstrate a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital 	<ul style="list-style-type: none"> • Instructor prepared class notes and Case study
13	<ul style="list-style-type: none"> • Value Discovery using Case Analysis <ul style="list-style-type: none"> ○ Discounted Cash Flow Analysis, Capital budgeting concepts ○ Understanding CXO Priorities ○ Preparing Board level presentations 	<ul style="list-style-type: none"> • Demonstrate a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital 	<ul style="list-style-type: none"> • Instructor prepared class notes and Case study
14	<ul style="list-style-type: none"> • Value Realization using Case Analysis <ul style="list-style-type: none"> ○ Establishing KPIs at the beginning of the Transformation project ○ Project governance models – decisions, rights, and accountability ○ Project management imperatives 	<ul style="list-style-type: none"> • Demonstrate a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital 	<ul style="list-style-type: none"> • Instructor prepared class notes and Case study
15	<ul style="list-style-type: none"> • Value Realization using Case Analysis <ul style="list-style-type: none"> ○ Planning Implementations ○ Managing Change 	<ul style="list-style-type: none"> • Demonstrate a clear understanding of the Approach, Methodology and Tools that can be used to align and discover value potential of digital 	<ul style="list-style-type: none"> • Instructor prepared class notes and Case study
16	<ul style="list-style-type: none"> • Case Analysis 	<ul style="list-style-type: none"> • Apply the concepts learnt to analyse the digital transformation case at Dell 	<ul style="list-style-type: none"> • HBR Case: Dell: Roadmap of a Digital Supply Chain Transformation
17	<ul style="list-style-type: none"> • Guest Lecture Session 1 	<ul style="list-style-type: none"> • Relate theory and case studies to practical industry examples 	
18	<ul style="list-style-type: none"> • Guest Lecture Session 1 	<ul style="list-style-type: none"> • Relate theory and case studies to practical industry examples 	
19	<ul style="list-style-type: none"> • Group Project Presentations 	<ul style="list-style-type: none"> • <i>Apply</i> the methodologies and tools of Value Discovery and Value Realization in developing business cases • <i>Identify and construct</i> a business case for a digital transformation program for the supply chain function of an organization 	
20	<ul style="list-style-type: none"> • Group Project Presentations and Course Wrap-Up 	<ul style="list-style-type: none"> • <i>Apply</i> the methodologies and tools of Value Discovery and 	

		Value Realization in developing business cases <ul style="list-style-type: none"> • <i>Identify and construct</i> a business case for a digital transformation program for the supply chain function of an organization 	
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Evaluation Components

Components	Weightage
Class Participation and Case Discussions	30%
Quizzes (2)	20%
Group Project Research	20%
End Term	30%

Online Course Management (Moodle)/course web

Additional course materials, power point slides, tutorials and assignments are shared in the course web by respective instructors after the corresponding classes, as and when required.

Mapping for the course with Program Level Goals

Goal 1	Goal2	Goal 3	Goal 4	Goal 5	Goal 6
Ability to integrate across business disciplines	Critical Thinking	Team Dynamics (a,b,c)	Communications Skills (Oral) (a,b,c)	Communication Skills (Written) (a,b,c)	Domain Expertise (a,b,c,d,e)