Call for projects – G3D January 2019

The G3D area of Rennes SB **calls for projects** in the following topics:

- Green Supply Chain Management (PI: Imen Nouira)
- Digital Supply Chain Management (PI: Nadjib Brahimi)
- Business Value of Information Technology (PI: Jose Benitez)
- Matching Supply with Demand (PI: Ramzi Hammami)

A description of these topics is given in the manuscript entitled "G3D presentation" (attached). It is highlighted that the firm's supply chain management and information systems are considered here from a broad perspective. It includes all disciplines related to Decisions Sciences, Operations Management, and Information Systems. For instance, topics on the interfaces between operations management and marketing, information systems and operations management, operations management and finance, strategy and operations management are particularly relevant.

In this document, we provide Rennes SB faculty with the following information: (i) Benefits of being a G3D member, (ii) Application rules and guidelines, (iii) Evaluation criteria, and (iv) Management process of selected projects.

The submission deadline is February 28th. The results of the evaluation process will be communicated by March 15th.

If you need more information, you are invited to contact the PI of each topic at any time.

We look forward to your applications…

1. Benefits for G3D members

The G3D members are all the researchers involved in G3D funded projects as well as all the professors of the SCM&IS department. Being a G3D member means that:

- You have funding for your projects.
- You can use the G3D resources (Research engineer, Research assistants, Strong computation machines with a comprehensive software's tool box, etc.).
- You have a research support from all members (in particular the PIs) and you help other members in your field of expertise.
- You get an additional bonus for your co-authored publications with other colleagues from Rennes SB.
- You participate regularly to the seminars and workshops organized by G3D.
- You work with an active research group that has a good national and international reputation and you contribute to enhance this reputation.
- You may benefit from the experience, and editorial activities and roles from the G3D members that will help you to succeed your own research projects.

2. Application rules and guidelines

It is first highlighted that this call is open to **all types of projects** (e.g., publishing in peer reviewed journals, preparing the ground for future research by identifying a "research niche" or/and exploring new research trends, preparing/submitting an ANR or a European project, building a teaching case study from research findings or from practical situations, etc.). For pure research projects, all **types of research methodologies are welcome** (mathematical modelling, empirical research, econometric methods, in-depth analysis of a case study, etc.).

For projects asking for funding, **you just need to fill the following table** with adequate information. An illustrative example is provided below. Given the accounting constraints, it is important to specify the total required budget as well as the **budget to be used before August 31st**. Applications should be sent to the PIs (please add Alina Fernandez in cc) before February 28th. The PIs will directly contact the applicants if more information is required.

(Please note that this is just an illustrative example)

Project title	Inventory placement in a serial supply chain facing a random and time-sensitive demand		
Members	Ramzi Hammami, Nadjib Brahimi, Zied Jemai (ENIT Tunis, Centrale Paris)		
Objectives	We consider a serial supply chain (with one supplier, one manufacturer and one retailer) facing a random and time-sensitive demand. Using a mathematical modeling approach, we aim to provide decision makers with guidelines to decide where to place inventories and to determine the optimal size of theses inventories at each period of time.		
Link with G3D	This research project is on the interface between the two sub-area "Matching supply with demand" and "Digital SCM"		
Impacts	***Research impact (if any)***	***Pedagogical impact (if any)***	***Practical impact (if any)***
	New approach in dynamic stochastic inventory models by considering a time-sensitive demand.	Not applicable	Most companies face a time-sensitive demand and do not know how to revise their inventory policy to take this important market characteristic into account. This project can help managers to undertake adequate inventory decisions in order to match supply with demand while minimizing the inventory cost. From this perspective, the results of this research project can be applied to real companies.
Deliverables & Timelines	***Type of Deliverable***		***Due Date***
	• Deliverable 1: A white paper describing a literature overview on stochastic inventory models and the positioning of our work. • Deliverable 2: A conference paper (ready for submission) • Deliverable 3: A journal paper (ready for submission)		• May 2019 • November 2019 • May 2020
Total required Resources & Estimated Budget	***Resources (in addition to the resources offered by the school)***		***Estimated Budget***
	• 1 master student (5 months) • 2 meetings at Centrale Paris		• 3000 euros • 600 euros
Resources to be used before August 31st	• Master student (3 months) • 1 meeting at Centrale Paris		• 1800 euros • 300

The submission deadline is February 28th. The results of the evaluation process will be communicated by March 15th.

Important Note: All ongoing research projects in the SCM&IS department are automatically considered as projects pertaining to G3D area (unless stated otherwise by the researcher). If no funding is required, then the researcher has just to provide a brief description of any achievement since October 2018 (e.g., summary of conference and journal papers accepted since October 2018, summary of any submitted ANR or European project in which the researcher is involved, summary of projects initiated with companies, etc.).

3. Evaluation criteria

Only projects relevant to G3D area will be considered. Proposals will be evaluated by the PIs. Final decision will be made by the G3D board. Evaluation will be based on the following tangible criteria:

- Are the objectives feasible?
- Are the deliverables tangible and impactful?
- Are the milestones specified and are they realistic?
- Is the required funding reasonable (according to the objectives, deliverables and milestones)?

Each project will have a score between 1 and 5 according to each criterion. A project that is co-funded by an external institution (university, company, organization, etc.) will receive a bonus of 3 points. Then, the projects will be ranked according to their total score.

The number of selected projects will depend on the available budget. This budget is around 55k€ for this academic year (to be used before August 31st), and is expected to increase in 2019/2020.

All applicants (either selected or not) will receive a comprehensive and transparent feedback.

4. Management process of selected projects

There are three important milestones for each accepted project.

- All selected projects are to be presented in a kick-off meeting that will be organized in April 2019.
- A mid-term meeting will be organized for each project to evaluate the progress of the work and to see if the objectives and deliverables are still feasible or should be revised. Based on the outcome of this meeting, it can be decided either to increase the allocated budget, or to decrease the budget, or to keep it unchanged.
- A final meeting will be organized at the end of the project to evaluate the outcomes and to see how to value the results obtained.

AoE: **Green, Digital & Demand-Driven Supply Chain Management**

G3D- Supply Chain Management

The area of excellence G3D Supply Chain Management is a multidisciplinary research group in the field of supply chain and operations management. It is articulated around 4 main research sub-area:

- Green Supply Chain Management,
- Digital Supply Chain Management,
- Business Value of Information Technologies, and
- Matching Supply with Demand.

Mission

Green Supply Chain Management

Principal Investigator: Dr. Imen Nouira
imen.nouira@rennes-sb.com

Many firms and organizations are facing the increasing pressure of environmental legislations and the rapid changes in customers' behavior towards the environmental impact of supply chain activities. This research area aims to revisit the operations management problems with the consideration of environmental aspects (environmental regulations, customers' environmental awareness, social welfare, etc.). In particular, we focus on the following problems:

- For companies, how to rethink the supply chain and product decisions while trading-off environmental considerations and economic performance?
- For regulators, how to design an efficient environmental regulation to improve the social welfare?

Relevant research topics also include:

- Reverse logistics
- Impacts of environmental considerations on supply chain design (facility location, supplier selection, technology selection) and production management (production planning, capacity allocation, inventory control)
- Impact of supply chain decisions on the environmental performance of products
- Green purchasing
- Green customer behavior

Digital Supply Chain Management

Principal Investigator: Dr. Nadjib Brahimi
nadjib.brahimi@rennes-sb.com

The emergence of new picking technologies (e.g., IoT / Internet of Things), transfer technologies (blockchain) and big data analytics is a big opportunity for companies to improve their processes of data transactions, demand forecasting, and planning. However, the adoption of these technologies represents several challenges for managers and practitioners.

- How to adapt traditional planning methods to make better use of new technologies (sensors, IoT, blockchain)?
- What is the impact of new technologies on the design and management of supply chains (production, warehousing, transportation)?
- How to use big data and business analytics to improve supply chain and business performance?

Relevant research topics include:

- Industry 4.0
- Data-driven supply chain management
- Business analytics in operations management
- Optimization, Heuristics and Meta-heuristics
- Demand forcasting

Business Value of Information Technologies

Principal Investigator: Dr. Jose Benitez
jose.benitez@rennes-sb.com

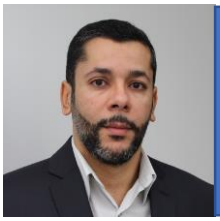
Investments in information technology (IT) constitute a significant proportion of the capital investments in the global economy. Our research examines how IT investments affect economic activities. This study of the impact of IT is organized into three areas:

- Business value of IT infrastructure - How does IT infrastructure affect strategic management (mergers and acquisitions, business flexibility, innovation, environmental strategy, and corporate entrepreneurship) to increase firm performance?
- E-business technology and operations management - How does Internet technology enable the firm to develop operational capabilities to increase operational performance? How do IT capabilities influence firm's internal organization and the scope of its activities at corporate and operational levels, the nature of the firm's interactions with its value chain (i.e., suppliers, employees, and customers), and affect value creation and performance?
- Social media - How do firms learn to develop social media capabilities to innovate, and improving customer experience and performance?

Relevant research topics also include:

- IT-enabled organizational capabilities development
- Role of new digital technologies (social media, big data analytics, cloud computing, mobile, Internet of Things, artificial intelligence, machine learning) in firm's innovation activities (digital innovation)
- Impact of social media initiatives in business activities of the contemporary firm
- Design and execution of digital business transformation programs and business value creation
- Digital leadership and business transformation
- Digitally-driven work transformation and digital workplace
- New developments in research methodology in Information Systems research

Matching Supply with Demand



Principal Investigator: Dr. Ramzi Hammami
ramzi.hammami@rennes-sb.com

An efficient management of supply chains requires a deep understanding of market and demand structure and a fine modeling of the relationship between supply chain decisions and customer demand. This research examines the following problems:

- How to integrate demand and revenue management with supply chain decisions?
- How to reach a better integration between marketing and operations?
- How to rethink supply chain design and management decisions with the consideration of endogenous demand?

Relevant research topics also include:

- Demand and revenue management
- Marketing-Supply Chain interface
- Lead time quotation
- Pricing
- Demand-Driven production management
- Analytical analysis of supply chain processes