

2018 Strategic Technology & Innovation Management Programme

Intellectual Property Analytics for Strategic Decision Making at the Technology Development Processes

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Industrial/ managerial need addressed

Big data is increasingly available in all areas of manufacturing and operations. Data as such presents value for enabling a competitive data-driven economy. Increased data availability presents an opportunity for better decision making and strategy development, to introduce the next generation of innovative and disruptive technologies and drive business innovation through digital transformation. While IP data is abundantly available and tools have been developed to run the analytics, for many firms still remains a problem on how they can fully use this rich source of technical information to complement decision making processes. In this research, we aim to contribute in solving the above problem by complementing technology development stage gate strategic decision making with IP analytics that analyse IP data, which in turn improves the human judgement for decisions. With this complementarity, we aim to build a deep learning IP decision support tool, to complement the human judgement and aid the decision maker in making a decision for a technology project. We aim at helping manufacturing firms to feed IP data into technology development decision making processes, by using advanced computer science algorithms for prediction and classification, which improve human judgement for decisions.

Expected deliverables

- Development of a conceptual model of an artificial intelligence intellectual property decision support tool (IPDST), for the TDP, which analyses IP data using ANN (advanced computer science algorithms), to complement the decision maker's judgement. Explore the uses around the innovation process
- (If time allows) Development of a preliminary artificial intelligence intellectual property decision support tool (IPDST), for the TDP, which analyses IP data using ANN (advanced computer science algorithms), to complement the decision maker's judgement.

Engagement opportunities

- Engage in survey and act as pivot point to further distribute the survey, to identify the most suitable selection criteria for technology projects (STIM2018 Project 1)
- Engage in semi structured interviews to understand the rational for every selection criteria identified and used (STIM2018 Project 1)
- Engage in workshops, with constructive discussions to identify the selection criteria, motives of using them and industry trends (i.e. different criteria might be more suited for different industries).
- Understand the needs for deep learning at the different stages of the innovation process
- Assess the preliminary conceptual model and the actual model