Paper n°2 : Automated business process management – in times of digital transformation using machine learning or artificial intelligence

Because of evolving customer demands, efficient process management and automation are now more crucial than ever: they easily prevent delays and errors and advance process management and automation especially if they use machine learning and AI efficiently . These technologies promises faster results and cost save but their applications require careful investigations in order for business managers and analysts to understand their effects, advantages, and disadvantages.

The foundation of this study was to observe and evaluate different companies and their business processing methods, with the goal of this research to offer advice on how to use these new technologies into business processes smoother and create a model to understand it.

The research methodology for this study elaborated field survey conducted through 25 digital companies in Germany who primarily rely on IT. 75% of the survey questions were focused on business process execution and IT applications. The process management team were interested in observing their daily work. The survey received 65 valid replies out of the 75 requested.

Moreover, "shadowing sessions", lasting between 4 to 8 hour per company were conducted to observe process flows, management tasks and applications. The collected data underwent comprehensive analysis in order to identify baselines and deviations. 87% of the requested managers of the 25 companies allowed the survey and interview as well as the shadowing to analyze the base line of execute automated BPM. With those statistical data, a model can be drawn.

The Survey showed that 100% of the respondents are affected by digitalization and 59% of these concerns are very strong while 35% stated strong and only 6% stated a low concern. Among the participants, 38% of the companies were at a growth phase, 51% a transition phase and 11% at the beginning of the implementation of digitalization. 39% of respondents worked in the IT branch, 19% at professional services, 15% at logistics, 9% in the banking sector.

The study produce statistical results allowing granted insight into how BPM and AI were seen and used by those companies: 52% of the companies were family business and middle-class business, 27% start up and internet business while 21% were enterprise business. 51% of the respondent rate data of the company described their data as strategic assets. 39% assessed that data as feasible data and privacy problems and only 9% were skeptical and only saw data as cost drivers .

100% of the attendees declared they knew and used BPM in the company and 85% wanted more process optimization and automated BPM applications. 12% use data warehouses, business intelligence systems or data lakes for data reporting and management. 75% of respondents know the term AI and machine learning but only 29% assess machine learning actually. 26% have already heard about deep learning while only a meager 2% execute it.

The study showed that the application of machine learning and AI into the processes of the company at the time of the article's publishing was only going to grow and require a greater need for automation. The study also established a comparison between the survey evaluation and the business evaluation of data analysis and acquisition, process automation and application of BPM and found that most participants overestimate the application of those points.

The results of the survey found two main findings through the elaboration of a model of study for business processes: Participants estimate their use of BPM and automated process management better than in reality and 45% of the compiled data from the companies are not used or effectively controlled.

Conclusion: digitalization is unstoppable and changes the market situation in many business sectors. This raises the question of manual labor as it slows down the workflows and automation of these could lead in more efficient result and time/cost saves. Targeted and focused automation when executed correctly could lead to increasingly better results for the company executing it.