ADDENDUM

ADDITIONAL ABSTRACTS

The following two abstracts do not appear in the Conference Proceedings book:

MB-02-5
Understanding Dynamics of a Closed-loop Dual-channel Retailing Supply Chain

Li Zhou[a], Stephen Disney[b], Takamichi Hosoda[c], Malin Song[d]
[a]University of Greenwich, UK
[b]Cardiff Business School, UK
[c]Aoyama Gakuin University, Japan
[d]Anhui University of Finance and Economics, China
ZL14@gre.ac.uk, disneysm@cardiff.ac.uk, hosoda@gsim.aoyama.ac.jp, *songmartin@163.com*

This research aims to understand dynamic behaviour of a closed-loop dual-channel retailing supply chain (SC). The SC consists of four entities: (1) an online retailer who simply passes on demand; (2) an offline retailer who adopts the inventory and order based production control system (IOBPCS); (3) a 3PL who collects, inspects and undertakes simple repair of returned products, then delivers to the manufacturer. We assume that the repaired products are as good as new, hence, the manufacturer can re-sell them directly; and (4) the manufacturer who implements Order-Up-To strategy. The manufacturer is a supplier to both online and offline retailers. A system dynamics methodology together with control theory are adopted in this study. System dynamics reflects changes and associated costs over a certain period. Control theory is a useful tool to analytically capture details of dynamics. We focus on two measurements: bullwhip and inventory variance. Two cases are investigated, i.e. with or without information sharing between two retailers. The findings suggest that online retailer has more advantage over the offline retailer in terms of less bullwhip and inventory variance, in other words, lower cost. Sharing inventory information between two retailers will not enhance respective dynamic performance as expected, i.e. less bullwhip and lower inventory variance. So, there is no incentive for them to share information. Surprisingly, reverse logistics doesn't help enhance manufacturer's dynamic performance as most researches claimed. From manufacture's aspect, he/she would encourage the clients to adopt pull practices in their operations.

MB-05-5
Cross-correlations between stock market and Twitter data in connection with soccer clubs

Attila Sóti
Szechenyi University Győr, Hungary
soti.attila@freemail.hu

Today's financial markets show complex behaviour which is the result of decisions made by many traders. Trends and political events have a great impact, but events like sports events may also have also some smaller impact. Human behaviour is not only based on rational foundations – people's decisions can be greatly influenced by their emotional state. Fans are following their favourite teams or clubs more than ever before. The topic of this research is to calculate the relationship between a volume of trading on stock market and Tweets numbers related to some soccer teams. This research is motivated by psychological evidence of a strong link between soccer outcomes and mood. Some studies have found a positive relationship between price change and the trading volume. We also found a close correlation between the sold number of Juventus shares and in an absolute value of daily change in the period on 2012-2014. We find a correlation between the sold number of Man United shares and in numbers of tweets which contain hashtag associate to Man United Economic. Twitter provides data

streams for almost real-time data download at different random sampling rates. A stream with about 0.5% sampling factor, the so-called sprinkler, can be accessed and downloaded and contains a representative sub-set of all tweets. Here we have worked upon identifying relationships between Twitter-based analysis of soccer clubs and its short-term market performance using large scale collection of tweet data. The common cause of change is the mood associated with a football club as a brand name. Financial benefits therefore lie in a better understanding of the behaviour of these complex systems. Individual happiness is a fundamental societal metric. Normally measured through self-report but can indirectly characterize and describe by more readily quantifiable economic indicators like shares value.

AMENDED ABSTRACT
The following abstract was amended from the version in the Conference Proceedings

MA-06-2
Dealing with resistance in the implementation of Industry 4.0 technologies
Adriana S. Ito, Jon Bokrantz, Camilla Lundgren, Anders Skoogh
Chalmers University of Technology, Sweden
adriana.ito@chalmers.se, jon.bokrantz@chalmers.se, camilla.lundgren@chalmers.se, anders.skoogh@chalmers.se

The implementation of Industry 4.0 technologies will cause changes in production systems. In this scenario, roles will change, different types of knowledge will be required, many of the previous tasks will no longer exist while others will be created. Changes are expected to be accompanied by resistance in the work environment. In order to ensure successful technological implementation, the resistance processes must be critically analyzed. The aim of this paper is to present a theoretical framework for understanding and dealing with resistance in production systems within the context of Industry 4.0. The methodology used in this study was based on a review of Industry 4.0 literature, followed by the identification of the major changes, and analysis of the correspondent resistance processes. A resistance framework is proposed concerning four major changes: decentralization of decisions, information transparency, change of work content, and technological support. To overcome the different associated resistance processes, four strategies are proposed regarding communication, negotiation, facilitation, and involvement. The contributions of this work are twofold. Firstly, they provide an exploratory theoretical background for literature in respect to resistance processes in Industry 4.0. Secondly, they introduce guidance for practitioners in order to understand and deal with resistance in the implementation of Industry 4.0 technologies, thus increasing the chance of success. As regards future work, we recommend the application of the proposed resistance framework in a case study.

CHANGES TO THE SCHEDULE OF PRESENTATIONS

Please note the following changes:

Papers presented in **Session TA-02 are labelled as TB-02** in the Conference Proceedings book and, conversely, papers presented in **Session TB-02 are labelled as TA-02** in the Conference Proceedings book.