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March 2018 Newsletter

Welcome to the March 2018 edition of the Cambridge Service Alliance newsletter. In this edition we are pleased to release details of our new membership model, as well as introduce our new member CEMEX. Please forward this to any colleagues who may be interested using the link above. If you would like to hear more about the Alliance or find out how you can get involved please contact us.

Andy Neely, Director, Cambridge Service Alliance

New Membership Model for the Alliance

For 2018 the Cambridge Service Alliance has launched a new model for membership. Organisations now have a choice of membership levels with which to engage with the Alliance. There is the top level of Gold membership, which allow organisations to be

directly involved in the shape Alliance research takes, and also allows membership of the Steering Committee. Silver level membership allows organisation to join two of the research streams, whilst Bronze level allows involvement in one of the research streams. A brochure that explains the new membership model is now available for download. If you think that your organisation might be interested in becoming involved please do get in touch. [\[more\]](#)



CEMEX join the Alliance as a Gold Member

We are delighted to announce that CEMEX has joined the Cambridge Service Alliance as a Gold Member under the Alliance's new Membership Model, as outlined above. CEMEX is a global building materials company that provides high-quality products and reliable service

Sensing for BIM

- **CDBB Research Scoping Workshop - 10-11 April 2018**
- **High-Quality Prediction Intervals for Deep Learning**
- **Does buyers' dependence translate into financial performance?**
- **Webinar - outcome-oriented contracts**
- **Welcome to Alliance visitor Federico Barravecchia**
- **Uncertainty in Deep Learning**
- **Webinar - Big Data Analytics**
- **Wearable sensor technology and business**

OUTPUTS/PRESENTATIONS AND EVENTS

Events



Cambridge Service Week 2017

Shift to Services 2-day programme

9-10 May 2018

7-8 November 2018

Ecosystems Strategy - 1 day programme

15 November 2018

Webinars

12 February 2018

- **Digital Business Transformation and Strategy: What do we**



to customers and communities in more than 50 countries throughout the world, and maintains trade relationships in 100 nations. Since 2016 CEMEX started its journey to design new services focusing on improving our customers' experience. The Design Lab Services was launched to research, diffuse and implement new approaches and best practices for Service Design. They are also committed to collaborating with Universities and experts around the world on applied research and innovation projects to get prepared for the Digital revolution. [\[more\]](#)

Alliance 2018 Research Programme

In collaboration with our Industrial Partners the research programme for 2018 will focus on prototyping proof of concepts, and having a digital roadmap which contains the required blocks to build a digital platform in the future, to operate and link technologies such as blockchain and AI. Our first pilot aims to reinvent the contracting systems of large industrial firms to help the design and delivery of smart services. The second pilot aims to **develop application of machine learning to manage and monitor customer experience to reduce friction during key moments of truth**. Other ongoing research available for partner collaboration includes: ecosystems; digital transformation strategy; prognostic analytics; and digital platforms.

CEMEX visit the Alliance



Martin Herrera and Myrna Flores visited the Cambridge Service Alliance on 7th February. Alliance researchers presented their work, which was followed by discussions and future research engagement between CEMEX and CSA.

CEMEX Hackathon- Report by Myrna Flores

Alliance members recently took part in a Hackathon organised by CEMEX. Here Dr Myrna Flores, from CEMEX,

know so far? - Mariam Helmy Ismail Abdelaal

15 January 2018 - **Big Data Analytics Architecture for Businesses - Open Source Perspective** - Kerem Kayabay, Mert Golkalp, Mohamed Zaki

11 December 2017 - **Using outcome-oriented contracts to foster performance improvements in logistics outsourcing relationships** - Torsten Steinbach and Florian Urmetzer

Upcoming:

12 March 2018 - **Does buyers' dependence translate into financial performance? An empirical analysis of manufacturer-service provider relationships** - Ornella Benedettini

Presentations and Papers

Papers

'Contextually Defined Postural Markers Reveal Who's in Charge: Evidence from Small Teams Collected with Wearable Sensors' by Julius Dietzel, R. Elena Francu, Benjamin Lucas, and Mohamed Zaki

'High-Quality Prediction Intervals for Deep Learning: A Distribution-Free, Ensembled Approach' by Tim Pearce, Mohamed Zaki, Alexandra Brintrup, Andy Neely

'Does buyers' dependence translate into financial performance? An empirical analysis of manufacturer-service provider relationships' by Ornella Benedettini and Andy Neely

reports on the the first CEMEX Hackathon in Cambridge. It was a successful example of Open and Lean Innovation best practices. [\[more\]](#)



Research Theme - Blockchains in Smart Services

This new project aims to develop a methodology to model and simulate the use of blockchain technology for automating part of the demand-supply operations of a manufacturing site and exploring new smart services enabled by this digital technology. The interactions between customers-employees-providers will be recorded, analyzed and triangulated with other real-time factory data to inform the models. The project will consider the codification of a blockchain application and development of scenarios' analyses. A demonstrator will be prepared to support, evaluate and improve the proposed methodology. [\[contact\]](#)

Ecosystems Strategy programme

This week saw the newly established Ecosystems Strategy programme take place. This course is aimed at demonstrating how to understand your business' ecosystem, and how by leveraging partnerships, you can deliver services quickly and effectively. When



designing new services it is important to bring them to market quickly and iterate delivery. Often, it takes a lot of time to build capacity and capability to fulfil customer's needs. The course will run again on **15 November 2018**.

Community of Interest for 2018

In collaboration with our Industrial Partners, we are currently planning the next three Community of Interest meetings in 2018. The focus of these events will be on ***"how can companies strategically design, pilot and experiment digital services in the new digital age?"***. Digital technologies such as Artificial Intelligence and Blockchains are becoming a prime topic for firms across the globe. In these events, the Alliance jointly will discuss two main topics (Blockchains technology to reinvent the contracting systems and Moments of Truth in Services: AI-Neuro-marketing Perspective) which have been suggested by the steering board of the Alliance partners. In particular, we would like to address the followings:

1. Design Proof of Concepts
2. Prototype Proof of Concepts
3. Experiment and Pilot.

The invitation to Col meetings is open to all employees of partner organisations. [\[more\]](#)

Research Theme - Moments of Truth in Services

This new research project for 2018 aims to develop a methodology and demonstration using real time data and AI technique to analyze the customers "moments of truth" to increase the quality of service experience perceived by the customer. Also, the project will consider capturing and analysing the interaction between employees and customers using data generated from wearable technologies. [\[more\]](#)

Service Week 2018 - 3 October 2018 - Save the Date



Disruptor or disrupted? Harnessing digital technologies for the next- generation of services

The world is undergoing a technological revolution. Technologies such as Artificial intelligence (AI) and Block-chains will transform the way we live and work, from the way we diagnose and treat cancer to the security of online transactions. These technologies became an important source of competitive advantage in both B2C and B2B businesses. Firms are currently facing a 'crisis of immediacy' challenge to meet consumers' need to receive content, expertise, and personalized solutions in real time during their experience. In this 'Thought Leadership' event, we will invite keynote speakers from big brands to discuss whether these technologies are the disruptors or disrupted and how firms can harness these digital next-generation technologies of services. [\[more\]](#)

Digital Manufacturing Week launch

Mohamed Zaki has been invited to join a select group of industrial leaders for the launch of Digital Manufacturing Week 2018 the UK's biggest celebration of advanced manufacturing at the House of Lords. In this event, senior members, along with the manufacturers, talk through what's new for Smart Factory Expo, Leaders' Summit, TMMX Awards and Top 100.

Webinar - Digital business transformation and strategy

Here Mariam Ismail discusses what we know so far in digital business transformation and strategy. This is based on her research which consolidates the current state of the literature. Mariam adds novel



insights regarding the positioning of digital transformation and reveals the key characteristics that distinguish it from previous technology-enabled transformations. [\[webinar\]](#)

Research: Building Service Business Model Innovation

OMMS: the wireless micro-factory that will treat people with cancer

The new OMMS micro- factory project aims to treat people in early cancer stages and mitigate damages. Veronica's particular focus is on the analysis of the diverse service business models that can help maximize value and benefits for all partners of the service ecosystem. We will be initiating the collection of context data from the key ecosystems actors. This will enable a good understanding of needs and contingencies that will be invoked in developing a product-service that can have seamless applicability and use. This project aims to help our society in the fight against cancer. [\[contact\]](#)

Smart Cities Expedition leader finds out about Co-Creation in Living Labs

Katharina Greve recently gave a podcast interview, based on her PhD research, on what cities can learn from companies that employ co-creation. The interview was with Arthur Lankester, who is



an expedition storyteller focusing on Innovation and sustainability. Arthur is currently on a tour where he plans to visit smart cities all over the world in search of sustainable solutions and inspiring stories during his one-man-on-a-motorcycle Smart Cities Expedition.

[\[webinar interview\]](#)

CDBB Mini-Project funding for Ancillary Sensing for BIM

Ben Lucas and Mohamed Zaki have been awarded one of the Mini-Projects funded from the [Centre for Digital Built Britain](#). The goal of this project is to develop two separate current practice, policy and future research frameworks under the umbrella theme of ancillary sensing for BIM. The basis for this will be two separate scientific literature reviews,

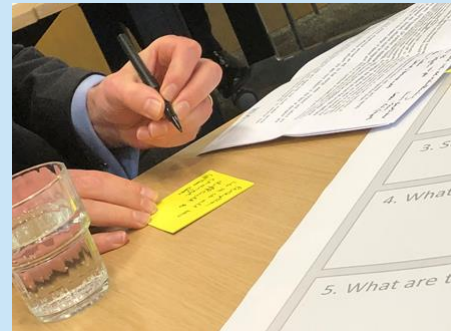
conducted manually by, and in consultation with, subject matter experts, and supported by automated analysis of scientific database resources (e.g. Thomson Reuters Web of Science), culminating in the development of thought-leading managerial frameworks.

[\[more\]](#)



CDBB Research Scoping Workshop - 10-11 April 2018

The Centre for Digital Built Britain has issued a call for **expressions of interest** in participating in **network bids** and potential future research programmes. An **initial Workshop** will bring together an academic community interested in the research to be done around enhancing



the performance of built assets and the services that depend upon them by better use of data. It will include a series of workshops in order to support the creation of networks to explore the current and needed capabilities of the UK in moving towards a digital built Britain.

[\[more\]](#)

High-Quality Prediction Intervals for Deep Learning



This research looks into deep neural networks (NNs), which have caused great excitement due to the step-changes in performance they have delivered in a variety of applications. It argues their appeal in industry can be inhibited by an inability to quantify the uncertainty of their predictions, and develops a method for the quantification of uncertainty in deep learning using Prediction Intervals. The method is tested on ten real-world, open-source datasets. The proposed method is shown to outperform current state-of-the-art uncertainty quantification methods, reducing average PI width by around 10%.

[\[paper\]](#)

Does buyers' dependence translate into financial performance?

In this paper Ornella and Andy investigate the effects of a service provider's



“dependency” on a manufacturer’s financial performance in supplier-buyer relationships involving a servitized manufacturer and a third-party provider of product-related services. It finds that as service provider dependency increases, the manufacturer experiences diminishing returns; as dependency increases beyond a certain, the negative outcomes offset benefits. Thus, overall, the study finds evidence of an inverted U-shaped relationship between a service provider’s dependency and a manufacturer’s

financial performance. [\[paper\]](#)

Webinar - outcome-oriented contracts

Outcome-oriented contracts are used for an increasing range of private and public services. In this webinar Florian Urmetzer discusses how the use of outcome-oriented contracts can foster performance improvements in logistics outsourcing relationships. [\[webinar\]](#)



Welcome to Alliance visitor Federico Barravecchia

Federico Barravecchia joined the IfM in February 2018 as student visitor at the Cambridge Service Alliance. He will focus on the analysis of future perspective for services in the Automotive industry during his visit. He is currently a PhD student at Politecnico di Torino - Department of Management and Production Engineering, in the Quality Engineering Group. His research interests are in the field of product-service system, servitization of manufacturing and quality engineering. Federico holds an MSc in Industrial and Management Engineering from Politecnico di Torino, Italy.



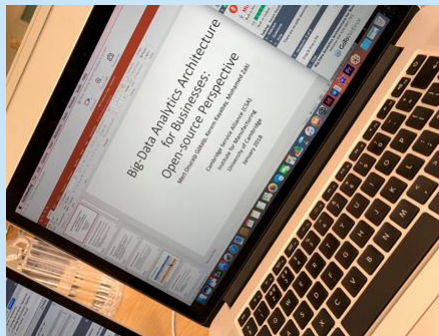
Uncertainty in Deep Learning

Tim presented his work on uncertainty in deep learning and its application to manufacturing data at an event organised by the newly formed manufacturing analytics group within the IfM. The event



was well attended by both academics and industry practitioners. [\[contact\]](#)

Webinar - Big Data Analytics



Kerem Kayabay presents his work on 'Big Data Analytics Architecture for Businesses', arguing that organisations suffer from a comprehensive architecture to manage and monitor the development of existing and new open-source big-data tools that are constantly growing. The

research underpinning this webinar aims to determine the shortcomings and strengths of developing a big-data architecture with open-source tools from technical and managerial perspectives.

[\[webinar\]](#)

Wearable sensor technology and business

Wearable sensor technology presents businesses with compelling opportunities to shed new light on human behavioural processes, within the broader spheres of ubiquitous computing and the internet-of-things (IoT). This paper investigates uses for wearable sensor technology in B2C markets, B2B markets, human resource management and organisational behaviour. It also considers future uses including contexts such as organisational transformation, built environment occupant behaviour analysis, and crossovers with building information modelling (BIM). [\[paper\]](#)



