

## IAP Summary for Lee Ming Siang

8<sup>th</sup>-26<sup>th</sup> January 2018

Summary of key moments and events at IAP, Cambridge, Massachusetts, USA

### 1. Leadership Speaker Series:

Able Sanchez: MIT Geospatial Data Centre

- Understanding on how Blockchain technology is disrupting the long held traditional powerbase of financial industry. The technology virtually by-passes the need of banks or financial institutions to remit or transact monies across countries, individuals or entities.
- The current Blockchain concept applies the concept of Open Ledger on Bitcoin, it shows how transparency, accuracy and verification of transaction could prevent user from replicating or trying to utilise the same Bitcoin for another transaction. It also shared why the adoption rate is still not in mass scale today as the key challenges faced includes:
  - i. Technology Fragmentation (too many versions of Blockchain technology are being developed)
  - ii. Lack of standardization – no common standards applied to this technology
  - iii. Lack of Government regulation
  - iv. Condition of privacy especially towards where and who the monies are being remitted or transferred to
  - v. Misuse by criminal i.e money laundering etc

Ralf Busche: BASF SVP Global Supply Chain



*Q&A with BASF SVP of Global Supply Chain*

- BASF have a strong and matured business process that matters to their core business. Their business foundation is built upon a strong internal business process supported through a single integrated ERP system. This enables the entire organisation to have a single and transparent view of their business status.

- BASF's strategy is to have their chemical business to be near to their supply site. i.e. Chemical plants near oil and gas refinery and cracker site. Whilst further downstream business to be nearer to their customers.
- BASF customer relationship is dependent on the industry they support. i.e. Automotive customers, regardless of their status as Tier 1, 2, 3 or 4 levels, BASF supports their customers in typical automotive requirements such as JIT, reliability and meeting planned deliveries. As for chemical business, it's typically following Oil and Gas practices and requirements.
- BASF have initiated an internal Analytics function; this function has grown in size and capabilities with numerous IP being developed for their business. This includes demand forecasting improvements that generated 10 percentage points improvement.

Joseph F Coughlin: Director of MIT Age Lab

- Illustration of how the world history's average GDP trend grows in tandem with life expectancy and where this is expected to be, and the key question on "where will the productive age group come from to continuously grow the world economy? And who will manage and run the logistics of the world?"
- Looking into the commonality of demographic changes in the world and the impact to logistics. A thought provoking statement includes "We live in a world where there are more older people than younger people". FACTS includes: Global average age of productive individuals ~47 years old, with current life expectancy to be ~85 years old. The world will soon be experiencing the "*longevity economy*"
- Interesting analysis where by 2047, there will be greater 60+ than 16+ age group. Interesting to note, as the more affluent the economy / individual the correlation of lower child birth rate, later in marriage and female empowerment in the economy and social status increases. This also correlates that the new aging population will have greater spending power compared to today's age group. Bear in mind, within

the next 29 years, the bulk of the population at this age would be from the Gen X and Y group.

- Interesting fact that today's Digital age, there is a strong momentum on autonomous / robotics industry. We are seeing the trend of autonomous vehicle, robotic factories all replacing human labour, this trend is expected to replace the workforce to address the ageing population as well.
- The driver for world economy is household consumption, with an ageing population and dwindling house-hold members the way packaging of products, service and delivery method would be impacted. Even the houses are getting smaller, **ownership** concept is being replaced by **nowership**.

#### FACT FILE:

- USD\$ 61B is spent on pets in United States vs USD\$ 60B spent on infants
- More adult diapers are being sold in Japan compared to baby diapers. Common trend that may happen to many ageing population countries.
- Average age of farmers in US = 61 years vs Indonesian farmers = 41.
- Men at age of 50+ have the highest divorce rate, due to the fact that more women reaching this age will have greater financial freedom to do more interesting things in life. (retirement age where 401k or pension fund kicks in)
- Many countries including China is faced with lower birth rate. Denmark is making a lot effort to promote couples to have children.

Bill Driegert - Director of UBER Freight



- UBER Freight aims to disrupt trucking services in US market. Their objective is to provide regulated, automated and simplicity for truck drivers. It also improves the efficiency, liquidity and transparency of transaction in the market.
- UBER Freight provides pricing automation for the independent truck drivers as well, the platform enables shippers and suppliers to procure logistics services. It helps create certainties to the market especially to the shippers / carriers to identify the cost/rates of trucking services and it's availability ahead.
- UBER Freight is exploring the possibilities of Autonomous Vehicle, such technology could disrupt the supply chain in United States, it can help mitigate the regulation of e-loggind device (ELD) that will be enforced in United States beginning 1st April 2018. Such technology would address the severe shortages of licensed truck drivers.
- UBER Freight is prioritising it's technology R&D and looking into application of Block Chain, interest in high to explore the usage of distributed ledger into freight services. Getting the industry to adopt this technology could be a challenge.

## 2. Fresh Connection

Competitive scenario game involving key principles of supply chain impact to financials of an organisation. This competition measures an organisation's ROI. Basically improving revenue stream and reducing investments or having investment returns to revenue. Key learnings include collaboration, resolving conflicts and understanding of principles of the game.

My role in my team is as Supply Chain Management lead, together with my team mates we managed a 3rd position in the competition. Our key game changer was collaborating with 2 other teams to bid for pro-longing the product life-cycle technology.

#	Team	Weighted ROI
1	mitsc - Team 7	54.29 %
2	mitsc - Team 14	38.25 %
3	Fresh Squeezed	37.40 %
4	SmartOrange	36.20 %
5	Ninja Turtles	35.71 %
6	Juice in time	29.67 %
7	Fancy Juice	29.64 %
8	mitsc - Team 29	28.98 %
9	Jorge for President 2018	27.46 %
10	mitsc - Team 5	24.82 %
11	Do Nothing	22.86 %
12	Harmony	21.78 %
13	Need a clever team name - will pay top \$\$\$	20.60 %
14	Sparkle Motion	19.02 %

*Ninja Turtles position in table ranked 5 before amendment to the ROI by removing investment allocation of \$400k for 2 cycles.*

### 3. Industry Tours

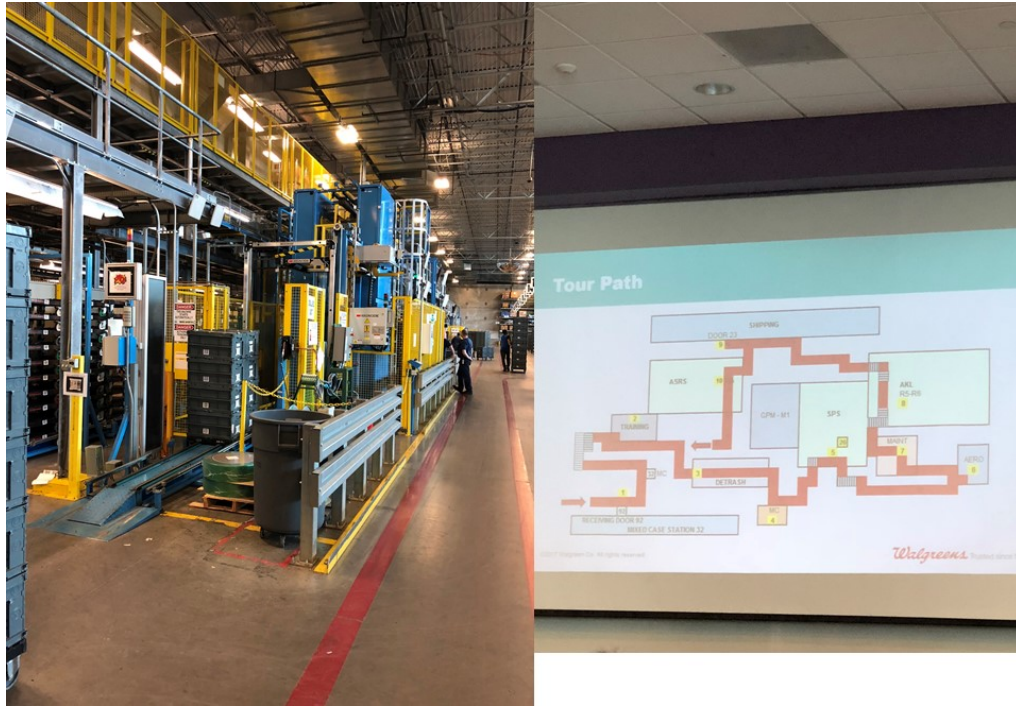
#### Walgreens Distribution Centre Tour:

- Walgreens vision is to be the number one patient and customer driven pharmacy led, health, well-being and beauty supply chain in the world through segmentation and agility. Walgreens Connecticut DC begins operations in 2008, serving more than 1,850 store deliveries per week, shipping more than 290 million units, 130 million line items, 13.3 million totes annually. The entire DC is managed by approximately 650 staffs. Supported by internal supply planning algorithm, this DC operation could support the entire Walgreen network in New England by stock keeping ahead of disaster. i.e. recent Winter Storm or Hurricane Sandy – Walgreen stores was operational and able to support residents with key supplies.
- Walgreens CSR believes in Hearts, People and Health, Connecticut DC develops Transition Workforce Group (TWG) to provide opportunity to Disabled community to work for Walgreens. As such more than 14% of DC's workforce are Disabled group.
- Walgreens DC system in Connecticut uses an integrated conveyor system from SCHAFFER to distribute goods from incoming to outgoing of their warehouse. An integrated warehouse with automated stacking system allows easy picking and shipping of products to their stores with ease and high efficiency. A system layout of their warehouse are as follows:
  - Goods receiving --> Detrash --> AS/RS --> SPS --> AKL --> Shipping
  - Detrash: Un-pack of inner boxes and removal of packing materials from incoming suppliers.
  - AS/RS: Inventories of bulk materials into auto stackers.
  - SPS: SCHAEFER Picking System: provides an ergonomic and systematic picking for employees to pick the right and accurate product to the totes
  - AKL: Automatische Klienteilager – Picking of small items by category/segments to Totes. Allows systematic picking of materials to the totes before shipping.



*Walgreen reception to MIT (left), an example of an AKL station (right)*

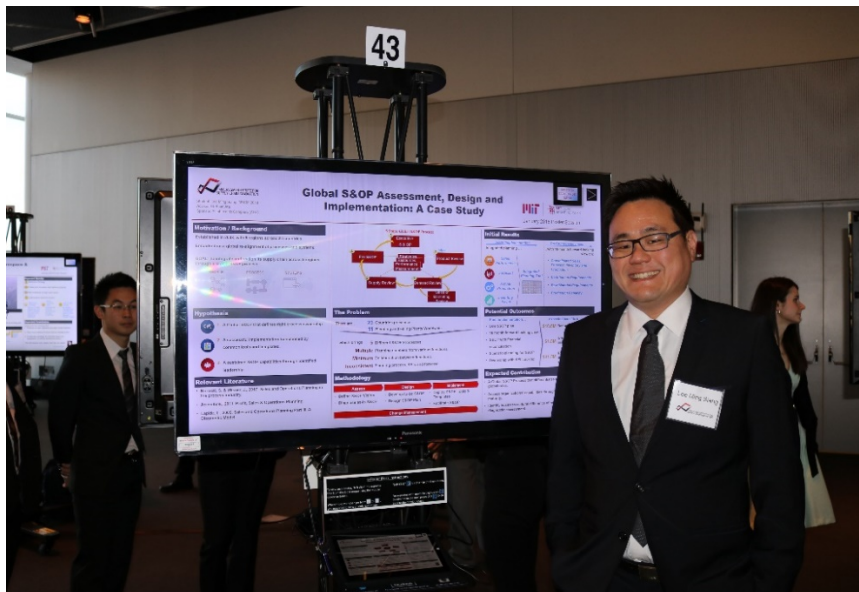




*Walgreens auto packing station with distribution lay out of their DC on right*

#### 4. Research Expo

Presented my case study on a Global S&OP Assess, Design and Implement. This experience is truly exceptional, industry leaders and academics all gathered in one single location to gauge and understand what are the latest in research and interesting innovation surrounding supply chain topics. Key notable presence met includes representatives from UBER Freight, CHEP, Tools Group consulting, BASF, Clark's distribution and many more.



*End of my summary Report*