Distinguished Keynote Paper:
The Internet-of-Everything

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ABSTRACT
The Internet-of-Things (IoT) offers a transformation to the digital domain of today's corporate. The coalescing of IoT device components into an interconnected digital IoT system delivers to a corporate a new digital IoT (DIoT) intelligence suite. These DIoT suites may possess cobotic or autonomous (digital representations of reality), or robotic intelligence capabilities that can add both agile, and self-adapting dimensions to the corporate. When appropriately (and real-time) data-mined for new corporate-wide knowledge, intelligence, capabilities, skills, and responses a corporate 'Internet-of-Everything' (IoE) can be created. The corporate IoE offers a transformation pathway towards 'fourth industrial revolution' competitive business solutions. It is a next step in delivering digital-age service, product, and real-time cobotic qualities. Such digital-age qualities are likely delivered step-wise - as the corporate, stage-wise, develops its digital strategies. Digital-age qualities can offer real-time solutions when incorporated as part of the corporate's digital development into a 'service value networks' domain where business-consumer transaction offerings are individually-developed in-line with each engaged consumer's request. This keynote presents the first corporate digital-age qualities deliverance and sustainability systems model.

Keywords: Internet-of-Things, artificial intelligence, augmented reality, transformation, digital quality

1. Introduction

The Internet-of-Things (IoT) connects physical components of operational devices via the internet. The IoT also provides a mechanism to assess some of the component data generated from such physical devices. As artificial intelligence advances, software developers are constantly pursuing new ways to frame such device data into useful corporate knowledge (Foss & Lindenberg, 2013). This in-turn has allowed some IoT devices to be moved towards corporate artificial intelligence (AI) interpretations (Kanzaki et al., 2017; Tanganelli & Curado, 2019). In some cases corporates are tracing consumers' actions (Dziśko et al., 2017) and then generating consumer behavioural interpretations (Choudhury, 2014; Petersen et al., 2018). Software developers, Google, Microsoft, Facebook, Amazon, IBM, SAP, and other leading-edge global corporates are today moving their consumer engagements towards behavioural responses capable of artificially mimicking corporate workforce responses, and by 2022, at least one AI component is likely present in over 80 per cent of all corporate IoT projects (Anon, 2017).

Hence, the Internet-of-Things (IoT) is now being transitioned beyond 'things' into a next real-time, inter-connected corporate revolution. Herein, this is termed the digital IoT (*DIoT*). Here, embedded robotic and operational sensors actively combine with real-time connectivities and big data analytics to intelligently connect machinery, vehicles, clothing, personal/home devices, and processes on a glocal scale. This is already unleashing great business opportunities (Tanik et al. 2017).

However, even at this level of IoT incorporation, many corporates are providing incomplete digital asset-management systems, and/or are providing low-levels of corporate-transformations across these new digital horizon interfaces (Riemke-Gurzki, 2017). Hence, these corporates only occasionally translate such digital transformations into new competitive growth opportunities.

Currently, artificial intelligence, business intelligence, virtual reality, gaming manipulations, intelligent robotics, and big data cloud analysis are further coalescing (Uma, 2019). These mergers are creating even more advanced digital IoT opportunities.

Into the future, suites of such advanced intelligent DIoTs are further digitally-coalescing into augmented-reality driven DIoT virtual corporate realities. Here, humans and robotic machinery (cobots) are able to

intelligently (and often remotely) manipulate, and even reframe IoT devices, their process controls and their robotic systems. However, this advanced DIoT likely requires new *authentic* digital staffing roles and new capabilities sets (Nissen, 2018), new digital *transactional* business approaches and new data analysis capabilities (Razavi et al., 2009; Swan, 2016), new digital *transformational* leadership approaches and new technological process deployments, along with collaborative intelligent integrations and control displays (Arsénio et al., 2014; Hwang, 2019). This DIoT transformation pathway includes intelligent software platforms capable of:

- driving new transactional efficiencies and qualities
- building predictive preventative maintenance scheduling
- reframing corporate digital leadership models
- incorporating augmented reality IoT solutions
- remixing theoretical scenarios with real-world sensing data
- driving real-time performance productivities
- directly managing real-time connectivities and servicing
- joining the smart digital revolution
- proactively-seeking, next generation, edge-technology corporate opportunities.

Thus this DIoT transformation progression offers new corporate opportunities including: scheduling, workplace dashboard control, predictive maintenance, and real-time process-to-consumer-connectivities excellence. It also embraces the intelligent, hype-discovery, edge-technology horizons (Shi et al., 2016; Samie et al., 2019). These corporate DIoT systems are coalescing into tomorrow's 'internet-of-everything (**IoE**)' (Miraz et al., 2015).

2. The Internet of Everything (IoE)

Such 'internet of everything' processes require the corporate and its workforce to rethink solutions in real-time, to use analytics, and to use event-streaming processes to analyze diverse data-in-motion, to identify what's most relevant, and to decisively act. Here the corporate's workforce adopt a digital approach. They deploy cloud, transformational network-edge, and device intelligences as required by the process or application. They combine these AI technologies to identify objects or processes. They engage natural language, and may use synergies or scenarios analysis. The corporate's intelligent platform also unifies life-cycle analytics, streams data, filters data, rates data importance, stores and analyzes relevant data, and deploys results towards useful continuous system improvements (Arsénio et al. 2014; Anon, 2018; Hwang, 2019).

The IoE is capable of delivering a new business model provided: (1) the relevant engineering capabilities can be digitally activated, (2) the relevant control data can be precisely monitored, (3) the connectivities between the networked devices is real-time active (and changeable), and (4) the devices intelligently interconnect to other interpretable (and comparable) business-relevant cloud and internal data. This then allows a net data collation that can be precisely business-intelligence assessed against competitive parameters resulting in the provision of near-real-time interpretation. This information is then near-real-time available throughout the business, and especially its operational and managerial systems.

2.1 Precise IoE Communications

Digital dashboards are information management display platforms that engage software to intelligently-aggregate complex electronic information (from multiple sensors/sources/databases/clouds/web/files). These aggregations are visually presented as business-relevant operational summations.

Dashboards allow decision-makers to: visually-track KPIs, monitor operational metrics (and other key data), and to indicate ongoing strategies/decisions. Dashboards can action data, and in real-time, they can intelligently resolve/control pertinent information. They can even correct aspects of a business' performance (against past trends). Overall dashboards make complex performance tasks real-time graphical and simple-to-interpret management tools.

2.2 IoE Data Qualities

2.2.1 Timeliness

The IoE brings together interconnected systems of communicating and intelligently-interconnected: computing devices, mechanical devices, digital machinery, agile cobots/robots, control objects, cloud database comparisons, and real-time, intelligently-sorted, data measurement integrations. Each sensory device retains a unique identifier (UID) - that links its real-time measurement into a timeline trend display - that can be manually/autonomously controlled. Thus, timely data transfers occurring throughout the business' network may not require human-to-human or human-to-computer interaction. These intelligently collated timeline trends are monitored and interpreted by relevant, skilled-decision-making personnel. These decision lines can even extend in near-real-time to the corporate board and CEO levels, and they can influence immediate strategic and competitive decisions.

With cloud computing (or edge computing acting immediately on its given data at source) intelligence-enabled solutions process data, sensors, and other connected devices - sending resultant data to a nearby edge computing device for further compilation and solutions.

Creating engineered IoE hardware and associated measurement devices, complete with smart analytics and embedded systems, likely includes an aggregation of basic off-the-shelf components such as: sensors, circuit boards, and microcontrollers.

2.2.2 Product Quality

IoE product quality seeks to digitally-capture the collection of product features/characteristics a product (performance, features, reliability, conformance, durability, serviceability, aesthetics, qualities) possesses. These are then intelligently/digitally framed towards meeting business-targeted deliverables that meet consumer/end-user requirements.

2.2.3 Service Quality

Service quality captures how well a delivered service conforms to the client's expectations. Service quality covers the (1) tangible appearance of the physical environment (facilities, equipment, personnel, communiqués), (2) reliable accurate, dependable performance of a service, (3) responsive treatment of a consumer engaged in a service activity, (4) assurance that a business/workforce is trusted and is confidently delivering the service, and the (5) business/workforce as one empathetically delivering caring, personalized attention to the consumer (Parasuraman et al., 1991; Babakus & Boller, 1992).

Today service quality has shifted. It often includes: ServQual's five subjective elements, ratings from mystery shopping, service feedback, follow-up or in-app-digital surveys, consumer scores, social media tracking, document analysis, and other relevant measures. These quality measurement sets can be digitized, optimized, and used, in attempts to lower failure/reject rates, product returns, consumer complaints, and the like. Thus corporate-delivered qualities (typically related to products, processes, and services) may be seen as improvements by consumers. Over-time, such corporate-delivered qualities can then help raise the consumer's reflective satisfaction, trust, and/or loyalty/renewal-rates.

However, quality studies still remain opinion-based, and so retain a subjective element. Under forthcoming corporate 5G connectivities and cloud data analytics, SVNs solutions (Roig et al., 2006; Hamilton & Tee, 2015; 2016) incorporating service qualities as part of the collective qualities dimension when delivering the five key values dimensions are likely to become a strategic consumer-connecting reality. Quality also has an intangible (and often difficult to measure) aspect - where a degree of assurance may be an important consideration. This also fits into the SVNs approach (Hamilton, 2007). Thus, quality holds many business-control and emotive aspects, and each corporate must weigh its quality benefits against the cost of delivering their perceived optimal-level of quality.

2.3 IoE Data Relevance

2.3.1 Corporate Cloud Integration

Corporate cloud integration permeates throughout next-generation digital business, where corporate strategies leverage cloud services from multiple sources to deliver a future suite of integrated solutions capable of enabling AI, VR, AR, IoE, consumer (end-user) computing, data/analytics, high performance computing and edge computing. Its cloud infrastructure delivers migration tactics, vendor selection,

negotiated mega-vendors solutions, multi-cloud environments incorporations, infrastructure sourcing strategies, hybrid/digital infrastructures and cloud optimization. This digital environment offers resilience, infrastructure security and risk strategies across multi-cloud infrastructures.

In many developed countries, cloud connectivity (such as Google, Facebook, Instagram, Microsoft, Apple, and Amazon) is very high, but business utilization of these available potential knowledge sources generally remains much lower. Across the Australian corporate business domain for example, only around 10% of corporates are strongly utilizing their digital cloud integrations resources, as competitiveness positioning drivers. This is due to the corporate leadership across Australia not employing a key IT toolkits strategy, not sufficiently innovating, and not sufficiently transforming their business towards a digitally-intelligent, ongoing, competitive corporate position.

2.3.2 Relevant Data Interpretations

The inherent value-of-data arises when we analyze and interpret digital data to determine what may be deduced, and what is actionable to facilitate enhancements to the corporate's business.

IoE data is only useful when it is intelligently, and optimizably interconnected (such as through 5G networks) to control and direct devices, or to provide real-time decision making assistance for corporate leaders/managers.

2.3.3 Relevant Data Presentations

Digital/visual presentations show components/content/trends displayed by technologies models images, charts, text, videos, and audio incorporations. These engagements, conveyances, messages, advice, and materials are intelligently collated and interpreted into useful, interconnected, recognisable and optimizable process systems. This often incorporates IoE digital dashboard visuals, and these IoE summaries allow the corporate to conduct real-time decision-making, control adjustments, or competitive advances.

2.4 IoE Real-Time Efficiency Solutions

A full IoE implementation is an end-to-end solution with multiple M2M, M2P and P2P connections. Corporates determine their implementation priorities based on their required/desired connections aimed at best opportunities to contribute towards business success.

A mining company might use IoE solutions to optimise operations and reduce costs by asking:

- What benefits can an IoE solution bring to the mining corporate?
- What types of profits are noted by owners, shareholders, employees?
- When should connections in the corporate IoE solution be prioritized?
- Where can connections in the IoE solution provide the optimal return on investment?
- Why can the connections in the IoE solution improve competitiveness?
- How can the corporate be impacted by the real-time data?
- How is cost-saving achieved by the IoE implementation?

2.4.1 IoE Logistics Integration

IoE logistics integration offers cost efficiencies (healthcare and financial services), operational efficiencies and energy management (manufacturing and mining), real-time decision-making (retail and transportation). IoE logistics is an integrated end-to-end. It moves materials into, through and beyond the firm. IoE logistics captures, shares and utilizes all relevant production-data and materials-tracking information in a combined way, and one that optimizes the entire end-to-end system. This data is often both fog and cloud stored. This logistics integration delivers cost savings too.

2.4.2 Digital Connectivities

Digital connectivities are the fog and cloud enablers that competitively link the corporate business systems of the future. They facilitate access into new markets, new product development, on-demand service deliveries, and offer platforms for the development/inclusion of innovative business models.

2.5 IoE 5G Speed Activation

2.5.1 Advantages of 5G

5G is the 5th generation of internet advances (20Gbps broadband speed vs current 4G with only 1Gbps). 5G is a cellular-network dividing territory into sectors, and sending encoded data via radio waves. Each cell-site connects into an integrated network (wired or wireless) backbone.

5G now offers cloud interconnection – potentially across all intelligent devices, along with many levels of lesser intelligent or low devices. It connects smartphones, sensors, thermostats, cars and even robots and removes connectivities delays across communication between devices and servers. 5G latency of communication of 4 millisecs (similar to fibre optics.). This means:

- Videos load faster
- Webpages load faster
- Around 1M devices/km^2 can connect
- Speeding-up of servicing (at less cost)
- Link/surround human activities to device interactions (autonomous-devices, safety, health)
- Multi-user, multi-point communications can connect
- Vertically-integrated platforms and services can engage
- Automated cloud networks, activities and behaviours can interconnect
- Wireless/wired/satellite services can connect and unite as a combined integrated system.

2.6 IoE Ongoing Improvements

2.6.1 Preventative maintenance

Preventative maintenance is where intelligent devices recognize their longevity of operating without failure. Such devices can also recognise if a failure due to some unforeseen miss-operation is likely, or is preventable, and so then self-schedules a maintenance initiative.

2.6.2 4D Printing

Today 3D computer-programmed deposition of materials in successive layers to create 3D objects is readily available. For example, in 2017 a 3D car was built in 2.5 days, and driven away.

Today 3D printing is extended to 4D printing where 3D-printed products can then be programmed under the influence of external energy input as temperature, light or other environmental stimuli to transform/change, and to then include some degree of shape or structural variation, or even become another structure. This is most useful in medical implants – for example in Israel, April 2019, a human heart was digitally layer-printed with human tissue/vessels (a "major medical breakthrough" advancing possibilities for transplants).

2.7 IoE New Realities

Technologies, innovations and social forces are transforming corporates, their workforces, jobs, services, communications, knowledge/data, intelligences and the rethinking of how corporates shape/deliver their products across the cobotic realities of tomorrow.

2.7.1 Virtual Reality

Encapsulates 3D computer-generated image simulations, interacting within seemingly-real, or human physically-manipulated, special digital equipment (such as Microsoft's HoloLens, or VR/AR interpretive visual/audio headsets or sensory gloves).

2.7.2 Mixed Reality

Encapsulates hybrid realities that merge real and virtual worlds producing new interactive environments and visualizations where physical and digital objects co-exist, interact and can be manipulated in real-time.

2.7.3 Augmented Reality

Extends mixed realities as an interactive experience of the real-world environment. Here, objects within the real-world are 'augmented' and can be moved by computer-generated knowledge-created perceptual information often involving mixes of multiple sensory (visual, auditory, haptic, somatosensory, olfactory) modalities.

2.8 IoE Multi-Skilled Workforce

Tomorrow's continually re-skilling cobotic workforce is capable of moving with transformational innovative technologies incorporations, delivering new levels of transactional qualities and authentically delivering the corporate-end of the business SVNs.

2.8.1 Service Value Networks

SVNs are personalized, bidirectional, real-time, communicative interactions between the workforce and each individual consumer (Hamilton, 2007). SVNs instantaneously:

- Interpret the consumer's connectivities, information, transactions, exchanges, and/or requests
- Draw on the corporate's intelligent values networks
- Collectively (and amicably) optimally-target each personalized corporate workforce resolution-and-delivery
- Move towards individually and optimally-servicing each specific consumer.

3. The IoE's Role

The IoE is astutely built as the integrated enabling system by which the corporate can establish its sustainable leadership positioning within tomorrow's digital-age. This incorporates the 4th information and cyber-physical industrial age. Here, throughout its ongoing advancements processes the corporate needs to deliver high levels of exactness qualities as:

- Service qualities (via SVNs)
- Product qualities (via precise, reliable, accurate, dependable, effective, efficient, empathetic items)
- Consumer-selected, flexible, interpreted-feature qualities
- Real-time logistical deliverance qualities
- Innovative technological incorporations qualities
- Cobotic/autonomous repetitive intelligence qualities.

Corporates should execute these qualities in conjunction with captured IoE data. The results are then transformed into a visioning foresight incorporating real-time AI comparisons to release other corporate values including:

- Greater efficiencies/productivities (with AI providing complex decisions and delivering cobotic/autonomous tasks).
- Cost reductions (through AI optimizations that also reduce marginal transaction costs).
- Higher profitability (Mittal, (2018) claim profits are likely to increase by 38% by 2035)
- Faster innovation life cycles (where AI simplifies corporate systems, and delivers simplified start-ups, scalable solutions, and growth across targeted operations).
- Better products and faster customer service (bots powered by knowledge and speech recognition).
- Faster time to market (reducing complexities, and enabling continual experimentation/ innovation) (Anon, 2017).
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Thus the IoE delivers a connectivities system that can be digitally utilized to advance existing corporate systems into integrated, intelligently-linked, smartly-analysed, new knowledge systems, and these real-time solutions capabilities can be interconnected as autonomous decision-making and device responsive systems. This IoE approach also likely offers corporate's new pathways towards sustainability and towards changes in competitive positioning.

4. How IoE Quality is Deliverable

IoE qualities are an integral part of SVNs suite that encompasses performance, quality, economic worth, services and empathetic satisfiers across transformational, transactional and authentic leadership domains. This requires us as ICIT drivers to find new, more pervasive, and deeper ways to measure quality as real-time cobotic, logistical, demand-chain measures.

A smart IoE device has 4 layers of interconnected systems capturing:

- System qualities (physical device elements eg. mechanical, electrical parts, processes).
- Information qualities (smart device elements eg. sensors, processors, storage, software).
- Decision qualities (combination analytics and knowledge-assessment)
- Transmission qualities (devices connectivities elements eg. ports, antennas, protocols).

The physical (system qualities) components are amplified by the smart elements. The smart (information qualities) elements are amplified by connectivities (transmission qualities). These then enable the analytics qualities (monitoring, controls, optimizations). When embedded AI is located within an IoT device it can learn from experience, adjust to new inputs, and accomplish specific tasks, without workforce intervention. For example, facial recognition, speech recognition, pattern behaviour, and beating a chess champion are each applied uses of AI.

Thus, with embedded AI-powered capabilities, IoT data can be transformed, analyzed, visualized, and embedded across the entire corporate ecosystem - into its edge devices, its knowledge gateways, and its data centres – based in the fog (where data processing, real-time analytics, security, and networking functions move from the cloud onto distributed-clouds closer to IoT devices/services – which also allows data to be processed locally within the corporate.), or in the cloud. This infusing of analytics into IoT systems and their applications generates an applied intelligence-of-things, and when systems-interconnected this becomes a real-time IoE solution for the corporate, and it is one that potentially can offer personalized and specific SVNs solutions for each consumer.

Thus to deliver real-time IoE analytics the corporate should include:

- Analytical qualities (in-built analytics to run AI/BI models as edge solutions).
- Prioritizing qualities (real-time analytics of event streaming that analyzes this diverse data in motion and then sources greatest qualities relevancies).
- Intelligence qualities (intelligence needed by software application in cloud, at network-edge, or at-device).
- Knowledge qualities (combining AI technologies, capabilities, objects, processing and natural-language into qualities solutions).
- Improvement qualities (continually assessing each analytics life-cycle against event-streaming data, by filtering the data, scoring the data, storing what data is relevant, analyzing, the data to deliver results focused towards delivering continuous improvement solutions across the qualities improvements system).
- Threats/opportunities qualities (detecting events-of-interest, then triggering reaction(s) against event-streaming to show complex real-time patterns that then offer quick detection and qualities initiatives).
- Remedial qualities (monitoring collated information from event-data streaming of sensors and devices, then finding trends/correlations/anomalies around smart devices that then initiate qualities remedial actions).
- Validation qualities (detecting delayed/incomplete/inconsistent sensors or devices data that can then be troubleshot and programmed for qualities rectification).
- Optimization qualities (developing predictive real-time qualities solutions through advanced-algorithms and continuous score-streaming, and then making real-time rectification decisions).
- Innovation qualities (engaging experimental, hype-cycle exploited solutions that can add towards qualities competitiveness positioning).

To achieve value from the digitally-connected world, the EoT system needs access to diverse device sensory data to determine what's important. Next, it must distil data insights from this rich context, and then generate rapid results - such as alerting an operator, presenting an offer, or modifying a device's operation. Successful IoE implementations should link such supporting capabilities across the full analytics life-cycle capturing:

- Data analysis in real-time (event-streaming, fast analysis of huge data and with low latency (few millisecs) to identify events of interest).
- Real-time decision-making/real-time interaction-management (event-streaming data builds a recommendation that triggers a right decision/action).
- Big data analytics (capturing intelligence from IoE devices, processing massive amounts of distributed data - such as Google's Hadoop approach and iterating data into enhanced model accuracy).

- Data-management (IoE data can be low, high, and in diverse-formats - then integrated/reconciled ready for its analytics).
- Analytical-model-management (gives governance across the life cycle of analytical models) (Anon, 2018).

Hence, when deploying IoE qualities across their analytics life-cycles, corporates should focus on their real-time digital AI and digital cobotic/autonomous device intelligence solutions. They should also build required their corporate IoE qualities-delivering solutions as competitive SVNs solutions.

Figure 1 presents a corporate digital-age qualities deliverance systems model as a structural pathways approach. This approach targets engaging the extensive, 5G, real-time IoE analytics qualities necessary to deliver corporate values, and to support ongoing corporate sustainability and to drive corporate satisfaction.

This systems model jointly applies information gathered from all four levels (1) system qualities across physical device elements, (20 information qualities (across smart cobotic/autonomous systems and other device elements), (3) decision qualities across combinations of analytics, knowledge, and innovations, and (4) transmission qualities across combinations of devices connectivities elements. Hence, as the Figure 1 model captures these and the above qualities, it offers a digitizable solution, and it can be designed to incorporate these qualities in real-time, and to gauge them against desired real-time values assessed solutions which can then enable corporate real-time sustainability improvement solutions.

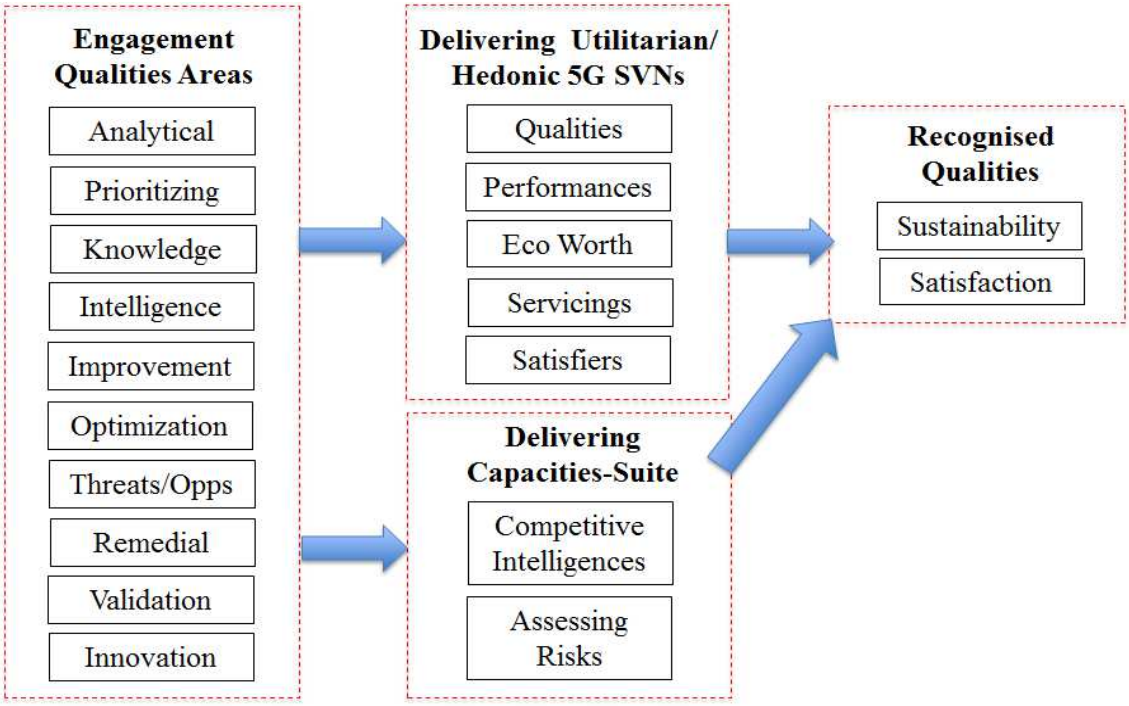

Figure 1 The digital-age qualities deliverance and sustainability systems model: Building 5G corporate sustainability:

5. Conclusion

The Internet-of-Things (IoT) has moved beyond just things. It now combines with the digital domain of today's corporate. The coalescing of IoT device components through to interconnected digital IoT platform systems is delivering new corporate digital IoT (DIoT) intelligence suites. These DIoT suites sometimes possess cobotic, autonomous, or robotic intelligence capabilities that offer both agile, and self-adapting capabilities. Within a corporate, these can also be extended to incorporate its developed augmented-reality IoT modification capabilities.

When appropriately data-mined and incorporated, new corporate knowledge, new intelligence, new capabilities, new skills, and real-time responses can also be created. This represents a corporate 'Internet-of-Everything' (IoE) approach. The IoE approach also offers digital transformation pathways, whereby the corporate can strategically network and deliver unique, digitally-competitive, '*fourth industrial revolution*' solutions. For ICIT and others, this IoE approach is the next step in delivering digital-age service, product, and real-time cobotic-style qualities. Such digital-age qualities are likely best delivered step-wise - as the corporate stage-wise develops its digital strategies. These digital-age qualities are likely delivered in 5G, and in real-time. Here, the overall 'quality domain solution' of the corporate's digital development into SVNs competitively-targets offering unique transaction solutions - specifically developed to meet the individual demands of each of its specifically-engaged consumers.

This keynote presents the first corporate digital-age qualities deliverance and sustainability systems model. This structural pathways approach targets engaging the extensive, 5G, real-time IoE analytics qualities necessary to deliver corporate values, and to support ongoing corporate sustainability and to drive corporate satisfaction. It opens rich areas for ongoing digital age qualities research, for qualities/values deliverance, for corporate sustainability through qualities deliverance, and for competitive positioning through qualities deliverance. It also introduces a capacities block that adds competitive intelligences and the assessment of risks into this Figure 1 systems model.

This systems model can also extend into multi-level modelling. Under this approach delineations between (1) system qualities (physical device elements), (2) information qualities (smart device elements), (3) decision qualities (combination analytics and knowledge-assessments) and (4) transmission qualities (devices connectivities elements) can likely unveil further Figure 1 system model qualities-prioritizing capabilities, and these may then offer further strategic improvements towards ongoing corporate sustainability.

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Author's Background

Dr. John R. Hamilton *is Adj Chair Professor in JCU's Cairns Institute. He researches competitiveness, innovation and strategic futures. He has extensive corporate national (and international) leadership and management experience. He consults on online and/or offline engaging interactive environments, and develops capabilities for business-consumer real-time interfacing. Current research interests include: big data business value extraction, digital leadership, value-deliverance, social networks, corporate and virtual intelligences, IoE qualities solutions, cloud business scenarios, major-events management, tracking, and interactive learning. John's Acute Futures Group engages international R&D task teams (Hong Kong, Indonesia, Singapore, Australia) seeking real-time, digital-age, value-deliverance systems for individual, horizon-shifting globally-focused corporations*