



Being Digitally Enabled

Guidebook

4

PLC Transformation (PLCT) Programme

Towards a more responsible and high performing
Corporate Malaysia



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How to use this guidebook

"There is no alternative to digital transformation. Visionary companies will carve out new strategic options for themselves, those that don't adapt, will fail."

Jeff Bezos, Amazon

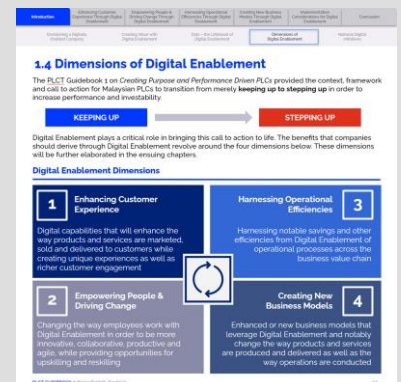
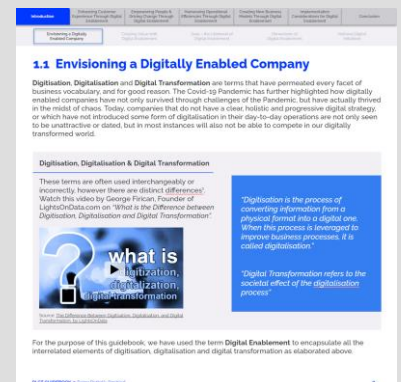
The objective of this fourth Guidebook in a series of five PLCT Guidebooks is to highlight the opportunities, benefits and imperatives for companies to adopt Digital Enablement, which will ultimately lead to notable improvements in overall performance and investability. This Guidebook focuses on how PLCs can derive benefits from Digital Enablement along the 4 dimensions of:

- Enhancing customer experience
- Empowering people and driving change
- Harnessing operational efficiencies
- Creating new business models

While this Guidebook does not focus on technology developments given how rapidly technologies evolve, many technological aspects, including those referenced in other PLCT Guidebooks, have been included to illustrate the implementation aspects of key propositions. Global and local examples and case studies as well as practice aids have also been included wherever possible to augment the principles and propositions outlined in this Guidebook in order to provide a better appreciation of the 'how-to' aspects.

The content in this Guidebook is intended to be of relevance to PLCs of all shapes and sizes; those which may be embarking on their digital journey as well as companies which are far along their digital maturity. At the very least, for PLCs advanced in their digital efforts, this Guidebook could serve as a good refresher or a catalyst for further change.

By virtue of the subject matter at hand and the broad target audience, the content and supplemental areas in this Guidebook are by no means exhaustive and further research and deliberation by respective PLC Boards and management is highly recommended prior to embarking on any of the proposed initiatives.



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Introduction



1.1 Envisioning a Digitally Enabled Company

Digitisation, Digitalisation and **Digital Transformation** are terms that have permeated every facet of business vocabulary, and for good reason. The Covid-19 Pandemic has further highlighted how digitally enabled companies have not only survived through challenges of the Pandemic, but have actually thrived in the midst of chaos. Today, companies that do not have a clear, holistic and progressive digital strategy, or which have not introduced some form of digitalisation in their day-to-day operations are not only seen to be unattractive or dated, but in most instances will also not be able to compete in our digitally transformed world.

Digitisation, Digitalisation & Digital Transformation

These terms are often used interchangeably or incorrectly, however there are distinct differences¹. Watch this video by George Firican, Founder of LightsOnData.com on “*What is the Difference between Digitisation, Digitalisation and Digital Transformation*”.



Source: [The Difference Between Digitisation, Digitalisation, and Digital Transformation, by LightsOnData](#)

“Digitisation is the process of converting information from a physical format into a digital one. When this process is leveraged to improve business processes, it is called digitalisation.”

“Digital Transformation refers to the societal effect of the digitalisation process”

For the purpose of this guidebook, we have used the term **Digital Enablement** to encapsulate all the interrelated elements of digitisation, digitalisation and digital transformation as elaborated above.

Spotlight Telekom Malaysia

TM's Digital Transformation Journey



Imri Mokhtar, Group Chief Executive Officer of TM Group, shares his views on TM's digital transformation journey, which encapsulates TM's vision to transition from a Telecommunications Company to a human-centred Technology Company.

Embedding digital enablement in all facets of the organisation has accelerated TM's transformation and has significantly changed customer experiences, enhanced people empowerment, harnessed operational efficiencies and created new business models.

In this enlightening [interview](#), Imri highlights the following:

“We are transforming from a Telco to a human-centred Tech-Co”

“The secret sauce of success, anchors around people. The technology is there and already available. It is really about the mindset of the organisation - starting from the Board, Management right down to the whole organisation - this is really important.” - Imri Mokhtar



Customer experience: how TM is providing customers with innovative digital solutions and services that correspond to the changing needs of lifestyles and workstyles today



Business model transformation: how TM has formed partnerships with SMEs, enterprises and the public sector to provide digital solutions to accelerate their digitisation journey



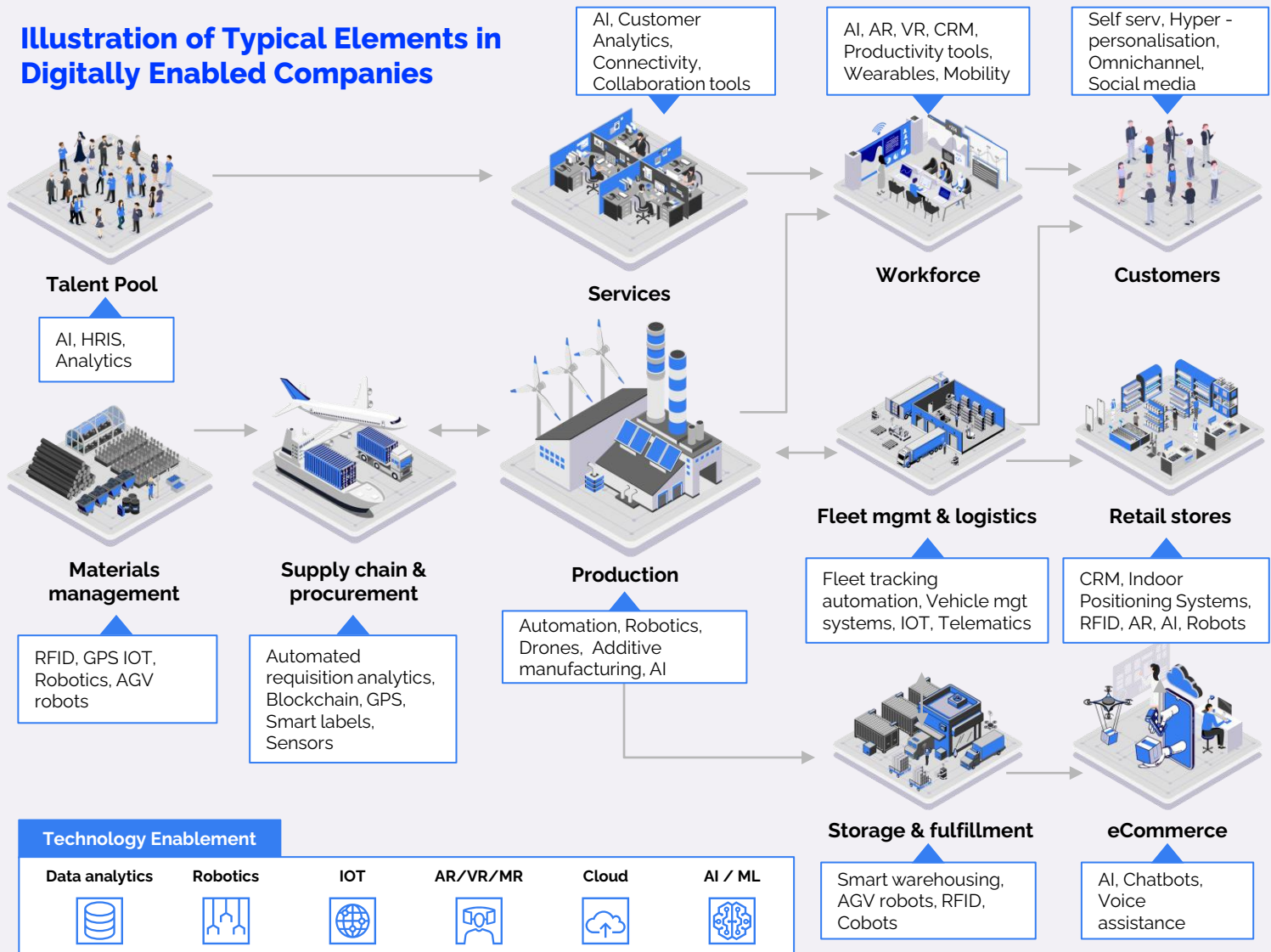
Increased operational efficiency: how TM, through analytics and automation, is strengthening its infrastructure, networks and facilities to meet today's connectivity and convergence demands



People empowerment: how TM has empowered its workforce through agile, RPA and hybrid work and learning opportunities in this digital age

So, what does a digitally enabled company look like? There are many aspects to digitalisation and this varies from company to company depending on the nature of business, customer experience, operational processes as well as delivery mechanisms. The following illustrates some of the typical elements in digitally enabled companies.

Illustration of Typical Elements in Digitally Enabled Companies



1.2 Creating Value with Digital Enablement

Digital Enablement efforts will generally require significant investments to achieve notable incremental returns. Ultimately, this correlation between investments made and increase in company performance will drive a virtuous cycle of growth. The following provides some context on the value that Digital Enablement can provide to our Malaysian companies.

The Potential Value of Digital Enablement to Malaysian Businesses and Consumers

RM334 billion

opportunity for Malaysian companies undertaking Digital Enablement²

6% - 15%

productivity gains from marketing and selling goods through digital channels observed by Malaysian retailers³

18%

more growth for companies that have integrated their payment systems with backend support services like inventory management and supply chain⁴

50%

of Malaysian consumers surveyed have adopted online shopping as their primary purchasing channel⁵

87%

of consumers say they are more likely to shop with retailers that use technology to improve the shopping experience⁶

67%

of shoppers prefer retailers remembering preferences and previous shopping behaviors, creating a more tailored shopping experience⁷

While Digital Enablement will create value when adopted well, there are risks and challenges that must be mitigated and addressed to harness this incremental value. The overall benefits to be derived from Digital Enablement efforts and some of the associated risks and challenges are summarised below⁸:

Value & Benefits

Risks & Challenges

Customers



- New products & services
- Greater convenience & more choices
- New experiences
- Lower or more competitive prices
- Cost of learning & information search
- Loss of privacy
- Activity overload
- Performance uncertainty

Companies



- Greater efficiency & effectiveness
- Opportunities to create new value
- New markets & customer segments
- Loss of existing value chain
- New competitors
- Faster innovation cycles
- New technologies
- Increased cyber threats & fraud

Individuals



- More flexible work models & flexible lifestyle
- Greater work participation
- Opportunities for crowdsourcing & crowdworking
- Automation takes over repetition & some degree of skillful tasks
- Partial replacement of human workforce

Society



- More efficient and effective public administration
- Better public services
- Privacy and data protection
- Oligopolistic or monopolistic market structures
- Challenges in regulation and taxation

The following real-life illustrations demonstrate how incremental value has been created through digitisation and digitalisation efforts:

Real World Digital Transformation Examples

Digital transformation is the transformation of people, process, and technology to fully leverage the changes and opportunities of digital technologies. Watch this panel discussion on real-world digital transformation, early success stories and challenges from a variety of perspectives across an organisation.



Source: [8 Successful Digital Transformation Examples in Business](#)

Digital Transformation & Value Creation

Digital transformation is about changing where value is created, and how a company's business model is structured. The following articles by Harvard Business Review and Marketing Intelligence Review describes this further.



Source: [Digital Transformation Changes How Companies Create Value](#)



Source: [Digital Transformation and Value Creation: Sea Change Ahead](#)

In order to harness the maximum value from Digital Enablement, companies need to put in place the following critical capabilities within the organisation⁹:



Organisation Change

Leadership, teamwork, courage and emotional intelligence



Data

Handle massive amounts of structured, semi-structured and unstructured data,



Process

End-to-end view across value chains and functions



Technology

Adopt and integrate relevant technologies

Digital Enablement has clearly become table stakes and the consequence of not adopting such enablement could significantly deplete the value of businesses as illustrated below ^{10,11}:

Lose Competitive Advantage

Companies which fail to provide a digital customer experience could potentially drive away customers to more digitally enabled competitors.

Miss out on Incremental Sales

Companies not adopting data driven customer analytics will miss out on valuable customer insights and incremental sales opportunities.

Forgo Cost Savings

Companies which do not digitally enable core operations and processes will forgo significant cost savings and margin improvement opportunities.



Consequences of not embracing Digital Enablement



Lower Productivity

Companies failing to adopt digital enablement in work processes (such as automation and workload management) will experience lower productivity levels compared to digitally enabled competitors.

Curtailed Growth

Companies which are not adopters of digital enablement will experience slower growth as competitors innovate their products and services with faster time-to-market to meet changing customers' needs

Talent Challenges

Companies which are not digitally empowering their workforce with productivity, connectivity and collaborative tools will struggle to attract and retain a high performing talent pool.

The following are some examples of globally well known brands which failed to embrace critical aspects of Digital Enablement and have since suffered dire consequences.



Examples

Toys “R” Us

In March 2018, Toys “R” Us announced that it is closing down its business in the United States after 70 years. One of the reasons that led to the demise was its inability to adapt to a new model where digital interactions have to be combined with physical retail to create a unified omni-channel experience. Read more [here](#).



Source: [Why Did Toys'r'us failed at digital](#)

Borders Group

Borders opened its first bookstore in 1971, and were a success for years. But in the mid- 2000s, Borders failed to adapt to new technologies and did not embrace the Internet like Amazon and Barnes & Noble. Read more [here](#).



Source: [5 reasons Borders went out of business](#)

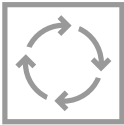
1.3 Data – the Lifeblood of Digital Enablement

Digital Enablement will not be possible without proper generation, collection, processing and application of data. Digital Enablement within a company requires not only a technology shift but also a cultural shift to putting data at the center of decision making and transformation efforts¹².

Data is key because every interaction in the digital world generates data. This data helps to create baselines and benchmarks for the transformation journey and provides a good indicator of progress¹³. The following illustrates the critical role of data in Digital Enablement efforts:



Data delivered in real time for informed and fast decision making not only enables business agility but also provides important insights into trends



Generation of intelligence from data in the form of predictive models for operational effectiveness will allow a virtuous cycle of improvements



Data generated from digitalisation efforts provide new avenues for monetisation and encourages innovation and simulation, driving higher speed to market for products and services



The necessary data management efforts in Digital Enablement will ensure the integrity, sanctity and security of critical data, thus heightening governance of Digital Enablement efforts overall



The need for, and generation of huge amounts of data in Digital Enablement drives the advent of cutting edge data analytics tools and capability, which in turn provides companies with a competitive advantage to manage risks and harness opportunities better

By 2025, experts indicate that over **463 exabytes of data** will be created each day, the equivalent to around **212,765,957 DVDs**¹⁴

The amount of data created by IoT devices is projected to grow at a **28.7%** CAGR up to 2025¹⁵

Data-driven companies are **23x** more likely to acquire customers¹⁶

1.4 Dimensions of Digital Enablement

The PLCT Guidebook 1 on *Creating Purpose and Performance Driven PLCs* provided the context, framework and call to action for Malaysian PLCs to transition from merely **keeping up to stepping up** in order to increase performance and investability.

KEEPING UP



STEPPING UP

Digital Enablement plays a critical role in bringing this call to action to life. The benefits that companies should derive through Digital Enablement revolve around the four dimensions below. These dimensions will be further elaborated in the ensuing chapters.

Digital Enablement Dimensions

1

Enhancing Customer Experience

Digital capabilities that will enhance the way products and services are marketed, sold and delivered to customers while creating unique experiences as well as richer customer engagement

Harnessing Operational Efficiencies

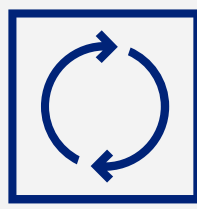
3

Harnessing notable savings and other efficiencies from Digital Enablement of operational processes across the business value chain

2

Empowering People & Driving Change

Changing the way employees work with Digital Enablement in order to be more innovative, collaborative, productive and agile, while providing opportunities for upskilling and reskilling



Creating New Business Models

4

Enhanced or new business models that leverage Digital Enablement and notably change the way products and services are produced and delivered as well as the way operations are conducted

Spotlight Maybank

Empowering Local Micro, Small and Medium Enterprises in the Digital Space

The Pandemic has challenged the agility and survivability of many local businesses. As such, 'Sama-Sama Lokal' was created to help spread awareness and assist local businesses in keeping their establishments afloat. Maybank connected these businesses to various Maybank platforms namely Maybank2U website, mobile app as well as its wide user base. Sama-Sama Lokal is a platform that democratises online selling for local businesses to establish their online presence and capability to reach out to more customers.

Attributes for Enablement and Empowerment of MSMEs

Enhancing digital onboarding experience

Digitalising a business is a challenging process for traditional business owners. To help them overcome this tech inertia, Maybank branch staff nationwide and dedicated ambassadors provided guidance and support throughout the onboarding journey. The simple setup process enabled merchants to operate their business seamlessly, from self-onboarding, setting up their online store, operating and managing business operations.

Harnessing Operational Efficiencies

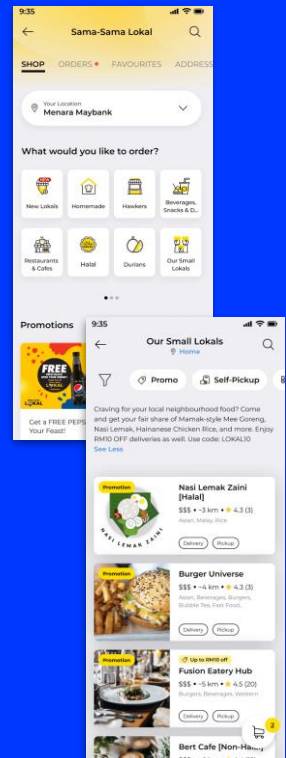
Maybank provided automated next-day settlement which helped merchants manage their business cash flow. Real-time notifications for incoming order and rider estimated time of arrival allows efficiency in the merchant's daily operations. Integration works were also done with 3rd party delivery partners so merchants can just focus on managing their store without the burden of fleet management.

Empowering Local Small Businesses & Driving Change

Maybank provided training programmes to merchants about financial literacy on managing cash flows and digital marketing including the use of social media in promoting their products. These tools along with the right digital skill sets and knowledge will ensure that merchants are fully equipped and can sustain their online business.

Business Model Transformation

Whilst this platform was developed for online businesses, it also enabled merchants to accept a cashless option for offline transactions. In addition, Maybank also recognises that brick-and-mortar businesses need to digitalise to remain visible to customers and future-proof their business, as such Maybank has made the platform an easy and commitment-free for MSMEs taking the first step to digitalise their business.



1.5 National Digital Initiatives

Spotlight Selected National Digital Initiatives

Selected National Initiatives to Support Malaysia's Digital Transformation Journey



The Malaysian Government recognises the pivotal role that digital plays in elevating the country's economy. As such, the Government launched MyDIGITAL, a national initiative that reflects the Government's aspiration to transform Malaysia into a digitally-driven, high-income nation and a regional leader in digital economy. To realise the aspirations of MyDIGITAL, the **Malaysia Digital Economy Blueprint (MDEB)** spells out the efforts and initiatives to increase the digital economy's contribution to the national economy and build the foundation to drive digitalisation across the nation while also bridging the digital divide. The MDEB complements other policies such as the Twelve Malaysia Plan (12MP). Link [here](#)



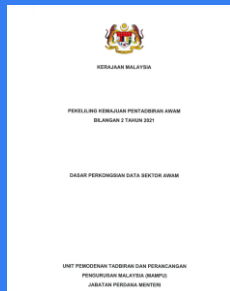
4IR Policy

The Malaysian Government launched the national 4IR policy in July 2021 with the aim of ensuring the country's readiness in harnessing the potential of 4IR. Read more about Malaysia's 4IR policy [here](#).



5G Rollout & Jalinan Digital Negara

Deployment of 5G infrastructure and network throughout Malaysia (link [here](#)). Jendela was established to provide wider coverage and better quality of broadband experience for the Rakyat, whilst preparing the country for 5G technology. Link [here](#)



Open Data Framework

The Public Sector Data Portal was established to provide access to open datasets online. Amongst the purposes of this initiative is to provide opportunities for businesses to foster creativity and innovation. Link [here](#)



Other National Policies

In order to push the digital economy to new heights, a number of policies and roadmaps have been deployed to strengthen the business environment that provides companies with opportunities for continued growth. Link [here](#)



2

Enhancing Customer Experience Through Digital Enablement



2.1 Customer Experience in the Digital Age

The phrase 'customer is always right' takes a new turn in the digital age¹⁷. With the advent of new ways of delivering products, services and value through Digital Enablement, companies have managed to create unique, enhanced or even new experiences that many consumers didn't know existed or even wanted in the first place! Customer centricity remains paramount for competitive advantage and embracing Digital Enablement not only provides access to a broader spectrum of customers, but also elevates the ability to meet the ever changing customer needs in this digital age¹⁸.

Customer experience is generally made up of the following attributes¹⁹:

	Reliability - the product or service provides the features, quality and security as promised		Availability - the product or service is available for use or consumption as promised
	Fulfilment - the product or service is deployed/delivered to the customer at the time and in the state as promised		Personalisation - the product or service provides adequate level of customisation to suit the specific customer needs
	Support - customers have the ability to seamlessly engage with suppliers/providers for feedback, queries and complaints		Resolution - Customer issues and queries are resolved in an effective and efficient manner
	Information & Engagement - Customers are able to get the necessary information on the product or service easily and proactively		Empowerment - Customers are provided with the facilities and resources for better decision making, self management and customisation of product or service features

*"By 2023, the 50% of retailers that have linked self-service technology strategy to digital transformation will see a **35% increase in net margin, 10% increase in customer loyalty, and 5% decrease in staff turnover**" - IDC .*

Many of these customer experience attributes get 'supercharged' in a digitally enabled environment with the adoption of relevant technologies. This creates enhanced, and in many cases new experiences that many customers have not enjoyed before. Some examples of how this supercharging can happen are illustrated in the diagram below:

Supercharging Customer Experience through Digital Enablement

Supercharged

Examples of Digital Enablement



Automation & Robotics



Sensors & IOT



AI & ML



AR, VR



Digital Twin



Geolocation



E-commerce



Social Media

DATA

Variations to Customer Experience



Reliability & Availability

On demand "always on" services with higher quality and speed to market



Personalisation

Customers are able to choose options best suited to their needs



Support

Instant and effective feedback and resolution of issues in real time

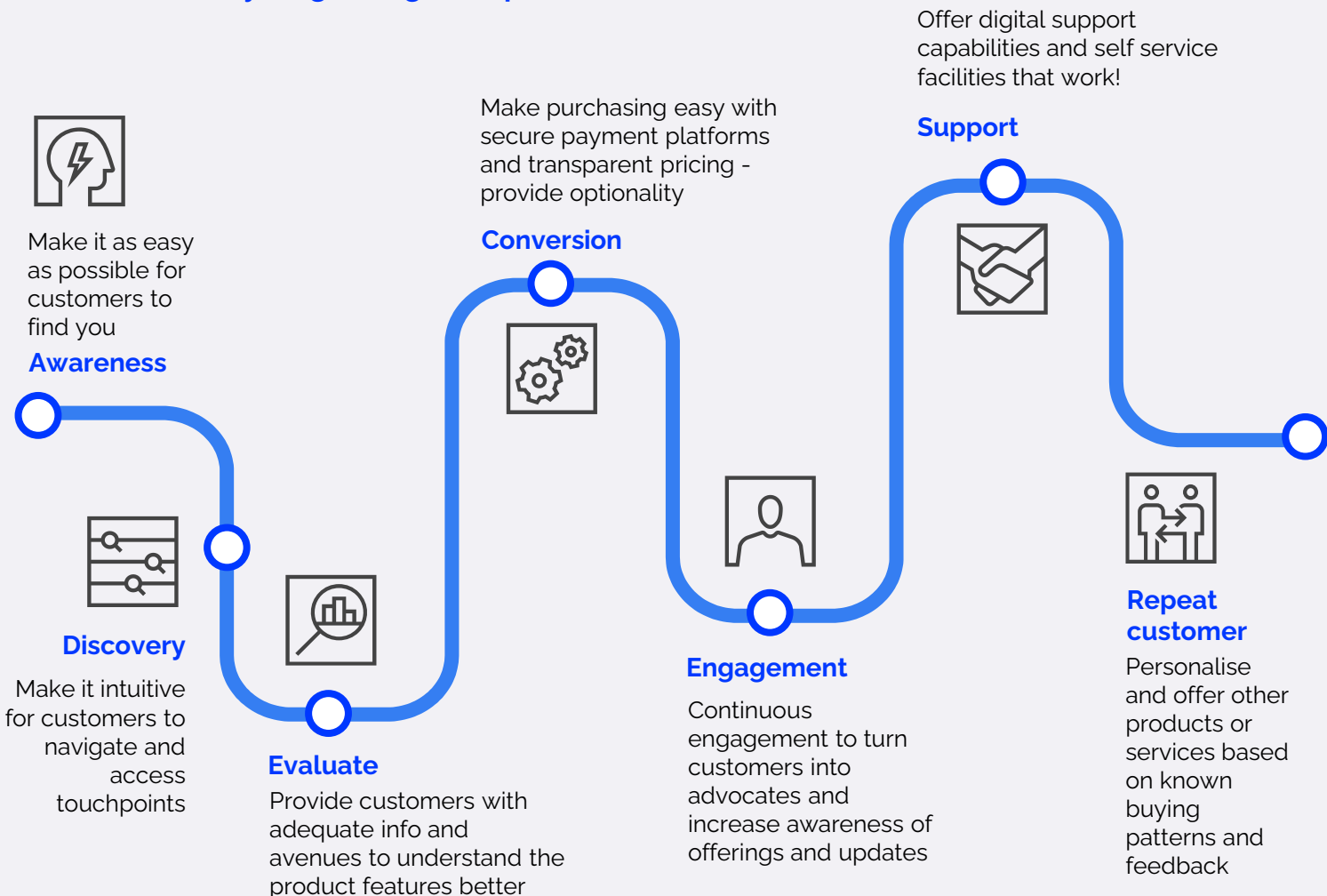


Empowerment

Customers can decide when and where to consume content, services and products

In a digitally enabled environment, unique customer experiences are generated through a differentiated customer journey and while the stages remain broadly similar to traditional customer journeys, they demonstrate notably distinct features and attributes as represented in the chart below:

Customer Journey Stages- digital experience



Spotlight

Maxis

Enhancing Customer Experience & Satisfaction

Maxis is deeply committed to providing an "Unmatched Personalised Experience" (UPE) which is their guiding principle to put the needs of customers at the heart of everything they do, delivering a customer-first experience, enabling them to proactively serve the increasingly digital lifestyles.

Transformation Initiatives Carried Out



Enhanced Capabilities of Digital Channels

Expanded digital presence through the Maxis Online Store as well as through partnerships with e-commerce marketplaces. Leveraged the digitalisation agenda amongst retail SMEs to cross-sell Smart Retail solutions.



Accelerated Digital Customer Self-Serve

Deployed MAXBot, that manages conversations with customers through WhatsApp & Visual Interactive Voice Response (VIVR), and a fibre self-diagnostic tool to self manage & optimise Maxis Home Wi-Fi performance.



Embedded AI-Powered Analytics for Actionable Insights

Leveraged advanced analytics powered by AI to produce insights to enable proactive engagement by predicting the likelihood that a customer is ready to engage.

Outcomes achieved

Visitors per month increased

by **38%**
compared to 2020



Growth in Digital Self-Service

by **12%**
points



5x increase in Digital Sales






7% points increase for Digital Reload



As a result of variations to the customer journey in a Digitally Enabled environment, there is a notable shift in customer experience when compared to traditional experiences. The following illustrates some of the more pronounced differences:



While Digital Enablement will require upfront investment and resources to create unique customer experiences, these unique experiences ultimately result in significant benefits including:

-  Broader market reach resulting in higher sales potential
-  Increase in customer loyalty & brand equity
-  Reduced costs of service and marketing
-  Faster identification of demand trends and buying patterns
-  More efficient resolution of customer complaints
-  Higher repeat customers due to targeted personalisation

Companies will need to address the following critical areas to create an ecosystem that supports and leverages Digital Enablement to create unique experiences²⁰ :

Strategy

Create an ongoing programme of improvements, adapting and excelling with the goal of increasing customer lifetime value. .

Structure

Organise across value chains to ensure 'end-to-end ' unique customer experience is achieved through agile²¹ ways of working.

People

Upskill and reskill workforce to adapt and thrive in a digitally enabled environment while maintaining the 'human touch'.

Process

Reconfigure the customer journey and supporting processes to provide a digitally enabled unique customer experience.

Infrastructure²²

Set up the appropriate support infrastructure for Digital Enablement for effectiveness and sustainability of unique customer experiences.

Data

Put in place the necessary mechanisms and tools to capture, process, analyse and utilise relevant data to support decision making.

2.2 Understanding Customer Needs

The ability to create unique customer experiences is anchored on the understanding of customer needs and behaviours. Digital Enablement has provided many avenues to harness more and more data which provide invaluable insights into customer behaviors and needs. *The basic principle is the more you understand about your customers, the more accurately you can predict what they want and deliver in the way that is most convenient to them*²³.

73% of customers expect companies to understand their unique needs and expectations²⁴



81% of customers have shopped across at least three or four channels over the past six months, with more than half shopping daily or weekly²⁵



86% of customers are likely to continue to shop online/ by phone when social distancing measures are removed²⁶

56% of customers expect offers to always be personalised²⁷

88% of customers say the experience a company provides is as important as its product or services²⁸

43% of customers prefer non-digital Channels. Satisfying customers generally requires great experiences both online and offline²⁹



Gen Z vs. Baby Boomers:

1.6x more likely to prefer engaging through digital channels³⁰



69% of customers are open to the use of AI to improve their experiences³¹

Customer needs have also shifted with the advent of Digital Enablement. As customers get used to the 'new norm', their desires and demands are also changing. Some examples of the changing attributes of customer needs are illustrated below³²:

Self service capabilities to choose their preferred features, time, place and manner of consumption

A mobile experience and a social media presence in most facets of their customer journey

More and more personalised and customised services and products to meet their specific needs

Less tolerant to product defects and service failures and look to a seamless ability for returns or refunds if unsatisfied



A seamless omnichannel experience to buying products or services from multiple channels

Increasingly demanding assurances on the safety and security of products and services and data privacy

Still a huge demand for the 'human touch' as a differentiator despite AI and automation, especially in times of uncertainty. Demanding a single "through line" between AI, chatbots and human intervention.

Constantly looking for (and comparing) good experiences from one interaction with another across products and services regardless of the nature and source of those consumables.

Customers today come armed with an internet full of information and their attitudes and behaviors change continuously. As a result, most companies face significant customer service challenges in predicting what will be the next customer trend or be able to respond to real-time complaints or feedback. Digital Enablement through data analytics has to a certain extent removed the guess work in this always-on, tech-savvy consumer world. Companies that deploy robust customer analytics are able to exploit all channels and data sources to make better-informed decisions about the service they provide³³.

The following illustrations demonstrate how data has been used to understand, analyse and act on customer needs³⁴:

Amazon

Dynamic pricing – Amazon changes its prices up to 2.5million times a day! What affects these price changes are factors like shopping patterns, competitor's prices and whether the product is common or not.



Marriott

To create a better customer experience, the company started testing facial recognition check-ins where guests don't need to wait at the reception desk anymore while the hotel gathers even more valuable customer information.



Netflix

Netflix collects data such as the time during which their subscribers watch a particular show, whether they binge-watched or it took them some time to complete, did they pause and if they resumed it after pausing; all of this is used to create personalised accounts for each consumer



UberEats

Entering a highly saturated food delivery market, UberEats wanted to be recognised as a delivery that always brings food while it is still warm, hence they also collected data of how much time it usually takes to prepare a certain meal to be able to pinpoint the exact time when the delivery person should come and pick up the delivery item



McDonalds

In line with with changing customer preferences for healthy living and online ordering – McDonalds transitioned from mass marketing to mass customisation. What they came up with was a drive-thru with digital menus that change based on a variety of factors – from the time of the day, to weather, and to historical sales data.

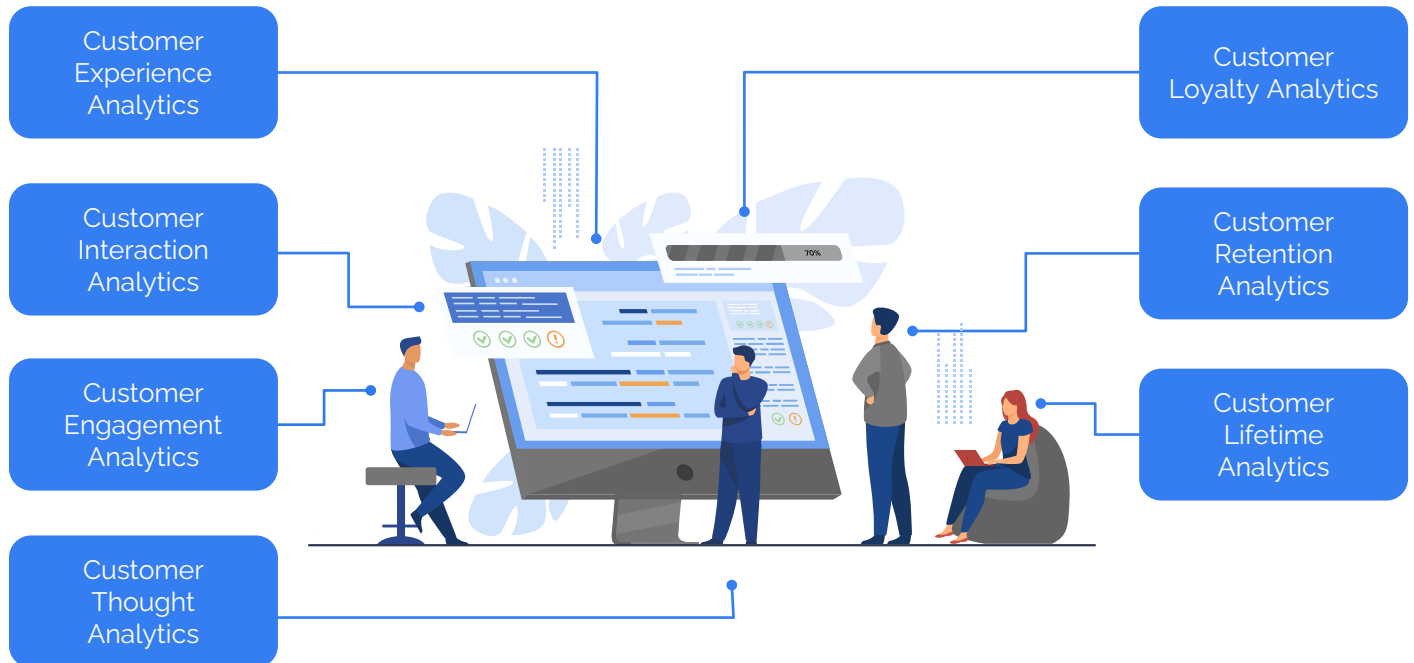


Starbucks

Starbucks used Big Data to create better customer experience, where they collected data by providing customers with Starbucks rewards programs and mobile apps which helped them learn more about each customer's buying habits. This allowed Starbucks to recommend products to their loyal customers, create better marketing campaigns and new menus, as well as decide where they'll open their next store



The following provides a guide on the various analytics techniques leveraging customer data which will enable companies to get a better appreciation of their customer needs³⁵:



Categories of Customer Analytics



Descriptive Analytics



Diagnostic Analytics



Predictive Analytics



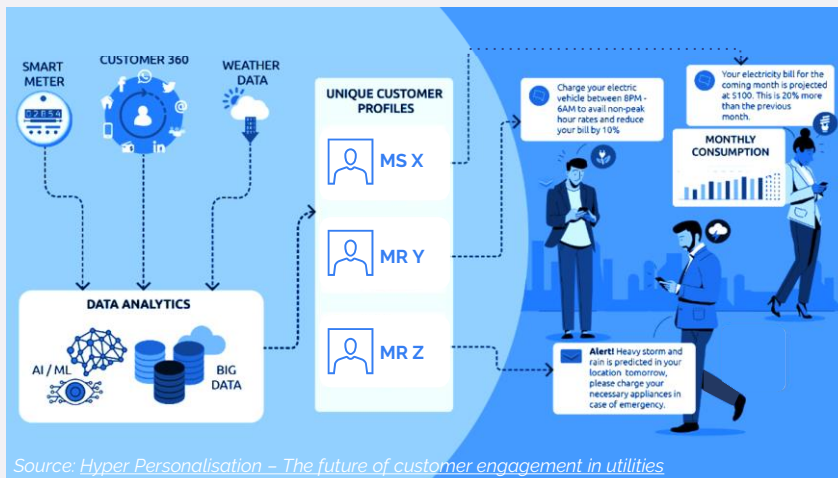
Prescriptive Analytics

Refer to this [link](#) for detailed description and examples on these various data analytics approaches.

2.3 Hyper-Personalisation & Omnichannel Experience

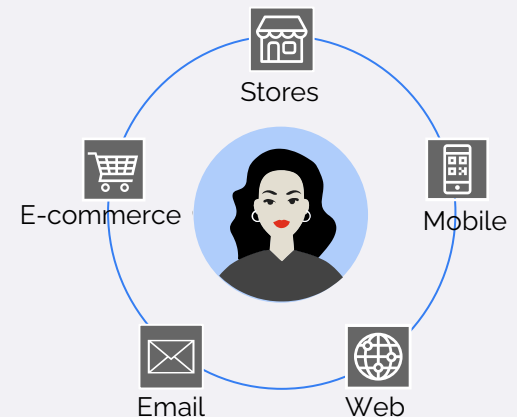
Hyper-personalisation and Omnichannel platforms provide interrelated digitally enabled approaches to create an effective ecosystem to meet the changing needs of consumers in the digital age.

What is Hyper-Personalisation and Omnichannel?



Hyper-personalisation takes personalisation to the next level by utilising the power of Artificial Intelligence and real time data to curate and create highly unique and personalised products, services and overall experiences to customers³⁶

Omnichannel is a cross-channel content strategy used to improve customer experience and drive better relationships across all possible channels and touchpoints. This includes traditional and digital channels, point-of-sale, and physical and online experiences³⁷



Hyper-Personalisation

Personalisation has always been the hallmark of creating unique customer experiences³⁸. Personalisation uses basic customer provided data such as user name, gender or location to tailor messages that speak directly to a user as an individual. Hyper-personalisation however goes much further and includes user's browsing behavioural information to address specific needs and desires to deliver highly relevant messages³⁹. The following examples illustrate how hyper-personalisation creates unique customer experiences⁴⁰.



Examples

Stitch Fix

Read about how [Stitch Fix implemented hyper-personalisation](#) for each of their customers.



Source: [Stitch Fix: A Strategy Fit for the Occasion](#)

Zalora

Watch this interview on how ZALORA is driving one-on-one personalised interactions [here](#).



Source: [Alqonomy](#)

The key features of hyper-personalisation and its differentiated impact on customer experience include⁴¹:

Features of hyper-personalisation

Differentiated impact on customer experience

Proactive propositions curated to individual consumers rather than broad segments that not only addresses demand, but also creates demand

Individual consumers feel that they are at the centre of the companies focus and the curated propositions increase relevance of products and services to the consumer

Insights that ensure the right products and services are provided at the right place, right time and with the right configurations

Consumers are presented with value propositions and experiences that take into account their current circumstances such as their location, environment and specific needs making the product and service highly relevant for consumption

Propositions to consumers can be changed as their behaviour and buying patterns change

Provides the ability to align experiences and products to the changing needs of consumers over their lifetime and changing personal circumstances, thus building brand loyalty and longevity

The following chart provides guidance for companies to embark on hyper-personalisation efforts^{42,43,44,45}

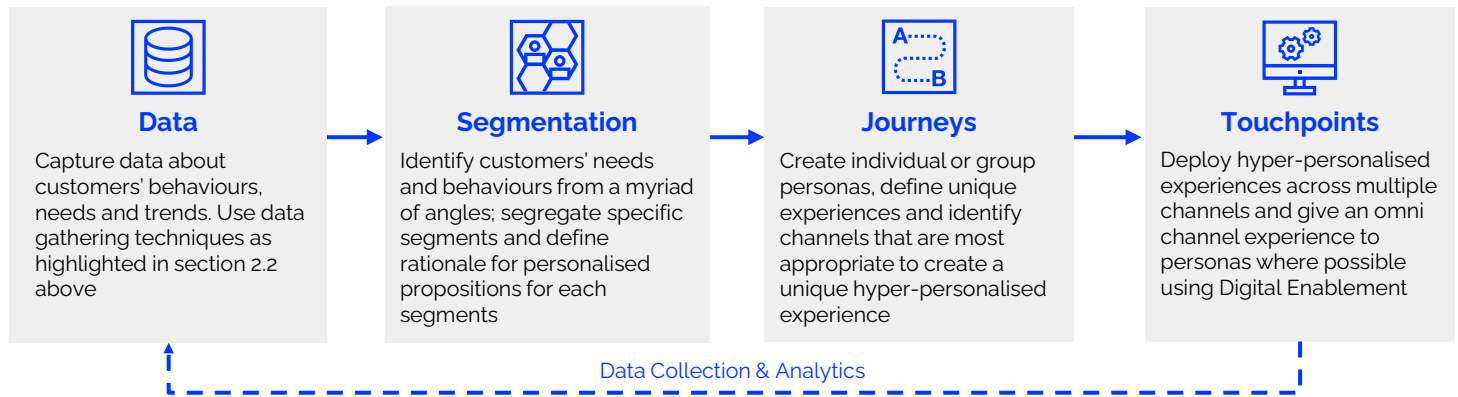


Illustration of Digital Enablement & Technology

<p>Data Management Platform</p> <p>Collects behavioral data from first-party websites, partner websites (second-party), and audience data from third-party sources. This data can be organised in the form of segments based on thousands of attributes, which can then be used to target online advertisements and specific content experiences in the product web pages, offer landing pages, and mobile apps.</p>	<p>Customer Relationship Management (CRM) & Data Platforms (CDP)</p> <p>Manages the known (or registered) customer profiles and their attributes in a central place. CDPs allow extended CRM capabilities by integrating externally sourced profiles from second and third-party sources. The addition of customer attributes and behavioral data provides a 360-degree view of the customer. Identity resolution tools help onboard the known customer data from CRM/CDP to the DMP, after anonymising those profiles through cookie matching.</p>	<p>Market Orchestration Platforms</p> <p>Increasingly important player in real-time personalisation. These platforms collect millions of data points on customer interactions from campaign engagement, browsing behaviors, purchase history, etc., and analyse them using AI algorithms to determine next best actions and messaging, driven by customer-centric business KPIs.</p>	<p>Digital Messaging Platforms</p> <p>Software tools that help manage creation, delivery, and response tracking of mass email communications. These tools also offer capabilities such as, automated campaign scheduling, email template creation, and dynamic content delivery. Email Service Providers (ESPs) are companies that provide end-to-end email marketing services, which may also cover email creative/copy development, strategy consulting, A/B testing and analytics of email campaign data.</p>
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Underpinning the Digital Enablement for hyper-personalisation is **the use of AI and ML**. AI provides a hyper-personalised experience by analysing page views, browsing patterns and other significant behaviors from each website visitor. These analysed behaviors provide insight into abandonment tactics, dynamic product recommendations, email remarketing and additional strategies that incorporate extremely specific messaging for the user.

Spotlight

Bursa Malaysia's Industry Collaboration

Leveraging AI, Big Data and Cloud to Develop Insights & Enhance Retail Customer Experience

The COVID-19 pandemic brought about a significant change in investor dynamics. Sustained low interest rates, lockdowns and additional cash at hand prompted many individuals to invest in assets offering higher returns, thus boosting retail participation. The shift towards endemicity and economic recovery has precipitated the need to understand driving factors behind investors' behavior in order to encourage further participation. To that end, Bursa developed a Proof-of-Concept, collaborating with leading Participating Organisations (POs) – as intermediaries between retailers and Bursa - using data and digital to enhance customer experience.

Accessing previously untapped industry-wide datasets, Bursa pioneered the initiative to analyse investors' trading behaviour and sustainability / volatility of returns, utilising time periods before, during and after the pandemic. Additionally, Bursa developed an analytics solutions offering actionable insights to address customer experience.

Key Takeaways



Investors' engagement: a hyper-personalisation framework to create customised initiatives to fit specific segmental retailers' needs; May be expanded to other investor segments and asset classes



Innovation: using relevant technologies delivered on a Cloud model to drive economies of scale and cross-organizational efficiencies; Capitalises on Bursa's industry-wide datasets alongside POs customer reach and intimacy



Data driven culture: collectively adopt and establish a data-driven culture with common standards for Bursa as well as POs; pivot away from traditional demographic-centric approach to a behavioral and experience-based model

Outcomes

Mapped out behaviour of retailers:

56%
of total retail market



Interactive self-service analytics solutions available



24/7

Increased Efficiency:

95%
Time saved in report preparation



DAILY updates
vs quarterly





Bursa Malaysia's Industry Collaboration

Leveraging AI, Big Data and Cloud to Develop Insights & Enhance Retail Customer Experience (cont'd)

POs' Points-of-View

RHB Investment Bank

"Customer experience is something we care deeply about at RHB, and our data analytics collaboration with Bursa has enabled us to analyze and monitor sentiment of the market, as well as variability and sustainability of returns. These new insights, which is offered on a robust digital platform, afforded us the capability to offer a customised financial education programme designed to support investor segments who are looking to improve their financial literacy. We are encouraged by the traction we see, and welcome Bursa's role in driving the data and digital agenda which can benefit the capital market." - Eddy Tan, CEO of Retail and Futures, RHB Investment Bank

HongLeong Investment Bank

"At Hong Leong Investment Bank, we are committed to providing the best in-class services to our customers. This collaboration allows us to uncover actionable insights and new opportunities using data and analytics, which enables us to improve our customer care through personalised offerings. This is a step forward towards improving our retail investors' customer journey with us, as we continuously monitor the results of our implemented strategies." - Kwek Kon Chao, COO of Hong Leong Investment Bank

CGS-CIMB

"The retail market is non-homogenous and dynamic, which means we need to be able to be adaptable and agile in order to anticipate and address the needs of the investors. The POC provides us the opportunity to tap into Bursa's rich industry-wide insights which allow us wider and sharper perspectives into the landscape. With the aid of machine learning, it paves the way for distinctive investor segmentation and enables the development of targeted marketing strategies aimed at satisfying and aligning with our investors' needs. We are excited to embed these robust data models and analytics into various parts of our business, from research to investor engagement and education." - Alan Inn, Deputy CEO, CGS-CIMB

M+Online Equipping Traders For The Win

"Retail CX helps us greatly in understanding our clients better in their trading preference, and provided valuable analysis in designing our trading support strategies." - Fok Chuan Meng, Head of Dealing, Malacca Securities

Omni-Channel Experience

The deployment of omnichannel strategies through Digital Enablement have become increasingly important as customer behaviour in this digital age has shown that there is a huge demand for a seamless experience across channels. This holistic strategy is different from a multi-channel strategy, where the various touch points operate in silos. In short, an omnichannel strategy breaks down boundaries to put the customer at the heart of the journey⁴⁶

Are Retailers in Malaysia Ready for the Omnichannel Revolution?

Based on an independent survey conducted in 2022 by PwC Malaysia*:

54%

Of retailers lacked integration across its sales channels

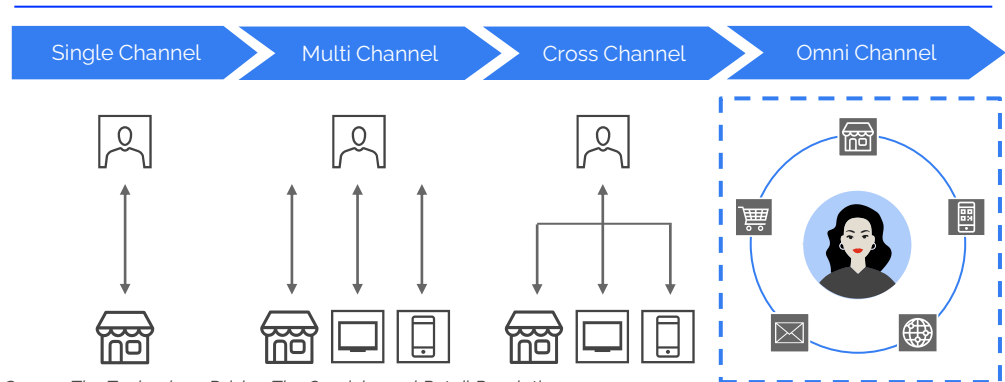
50%

Of retailers still have room to improve in fulfillment and payment options

72%

Of retailers have fairly good user navigation features

The Omnichannel Retail – how it has evolved

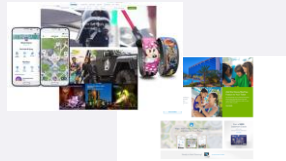


Source: *The Technology Driving The Omnichannel Retail Revolution*

Examples⁴⁷

Disney

Disney created memorable seamless experiences by connecting multiple channels (website, mobile app, smart wristband) into one unified ecosystem.



Sephora

Sephora's mobile app drives personalised omnichannel experiences, (booking in-store appointments, offering recommendations based on both in-store and ecommerce interactions)



Benefits

Discover new customer segments



Higher availability



Improve customer lifetime value



Drive operational efficiencies & profits



*To read more, click on this link:
[Are we ready for omnichannel retail in Malaysia?](#)

The essential Digital Enablement components of an omnichannel presence include the following⁴⁸:

eCommerce Stores

eCommerce stores refer to a brand's website shopping experience including, but not limited to the processes of selecting an item or service, checkout, shipping, and customer service.



Digital Marketplaces

Separate from eCommerce stores, digital marketplaces are online shopping portals that sell multiple brands and products under a larger umbrella. Amazon and eBay are some of the most popular digital markets today.



Social Selling

Social selling includes the sales of products, goods, or services across all channels of social media including Facebook, Instagram, LinkedIn, Twitter and more. Likewise, social selling also includes engagement with consumers across the aforementioned social media channels.



Mobile Applications

Mobile applications enhance a customer's experience by providing opportunities for interaction with a brand. Most mobile apps are built to offer discounts, reward points, and customer service as well as shopping.



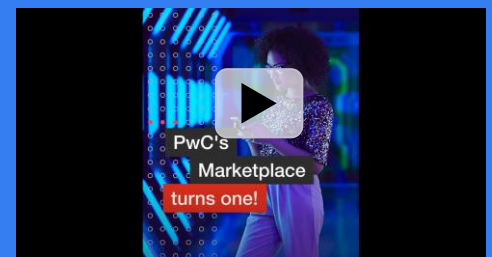
PwC Malaysia's Digital Marketplace

Building an omnichannel presence

PwC is a professional services firm with a global presence working with organisations and individuals to create value by delivering quality Assurance, Tax and Advisory services. In 2021, PwC Malaysia launched its first digital B2B Marketplace where businesses can find an array of technology and academic solutions catering to different business issues.

PwC recognised how businesses are rapidly evolving and the need for organisations to embrace Digital Enablement in their transformation efforts. In line with its 'human led, tech enabled' philosophy, PwC Malaysia has built an omnichannel presence to expand its support for clients and this Marketplace is now being rolled out regionally to serve clients across the Asia Pacific region.

Find out more here: [PwC's Malaysia's Marketplace](#)



Source: https://youtu.be/RZyZwBkl_FI

2.4 Digitally Enabled Customer Engagements

Digital customer communication or engagement refers to the communication sent by companies to its customers via digital channels such as text messaging, email, instant chat, app notifications and other similar mediums⁴⁹. Digital communication lies in the heart of creating a unique customer experience and Digital Enablement has changed the landscape of interacting with customers in many ways including⁵⁰:

Chatbots reduce the need for human intervention in customer service

AI-driven call centers eliminate the gap between online and offline customer service

Social networks have become a standard customer service channel

Message management allows companies to merge its social communication channels into one inbox for quicker response time

Canned emails are automated responses where digital templates are created for the most common customer inquiries and used to provide faster feedback



Engaging customers with AR allows customers to visualise a product virtually and thereon purchase with confidence

Social media monitoring allows companies to collect customer feedback and to be able to evaluate customer sentiment

Triggering FOMO with social proof happens when individuals conform to the opinions of larger groups of people which can be used to build trust and credibility for companies

Personalised email marketing and customer support engage leads, turn them into paying customers, and build long-term relationships

AI-backed email support will read emails and analyse issues, intent and emotions to enable companies to better problem solve via the right customer support interventions

2.5 Call To Action & Useful Links



Call To Action



Companies must urgently keep up with rapidly changing customer preferences and behaviours brought about by Digital Enablement or risk being irrelevant very quickly



Creating unique digitally enabled customer experiences involves the whole organisation and is not merely a technology change. Changes must be looked at holistically with a bold resolve to course-correct where required



Hyper-personalisation and omnichannel experiences have become table stakes in most industries and customers are demanding these experiences - ignore it at your peril!



Companies must invest in data management, security and analytics capabilities in order to be successful in their digitally enabled customer experience efforts



With rapid changes to underpinning technology, new and unique customer experiences that shape customer behaviours are continuously being introduced- companies must stay abreast of these changing trends or risk being left behind



Ability to embed the 'human touch' with digital experiences will be a sought after differentiator



Useful Links

- ✓ [Designing a Seamless Digital Experience for Customers](#): This article discusses four connected customer experiences that companies can create.
- ✓ [Digital Customer Experience Guide](#): Learn some best practices in developing a digital customer experience with some free guides and tips
- ✓ [Ways to Improve Digital Customer Experience](#): Examples of how companies can improve their customer experience
- ✓ [Omnichannel Marketing](#): This resource provides a complete guide to what omnichannel marketing is all about.
- ✓ [Hyper-personalisation](#): Read more about how to implement hyper-personalisation

3

Empowering People & Driving Change through Digital Enablement



3.1 Workforce Empowerment Through Digital Enablement

It is a well known fact that the Pandemic accelerated the adoption of digitalisation across ways of working and empowered the workforce of companies. While this accelerated change in the ways of working was driven mostly out of necessity, the resulting empowered workforce has become an important contributor to sustained value for companies and has showcased today, the realities of the workforce of the future. Employee empowerment is all about giving staff more autonomy and responsibility for their daily work. Companies with a culture of employee empowerment provide workers with the resources, opportunity, and authority to make their own decision and companies derive huge benefits thereafter⁵¹:

Benefits companies expect to derive from workforce empowerment

More motivated employees

Enhanced brand and employee retention

Improved ideation and creativity



Increased trust in leadership

Increased employee engagement

Positive impact on company performance & profitability









Based on a survey on the *Impact of a Digitally Empowered Workforce*⁵²

34% Increase in efficiency among empowered employees

17% Less time spent on manual process when apps are made available

3X More likely that a company is rated as a Digital Transformation Leader* when fully empowering employees.

Digital Enablement has played a pivotal role in accelerating employee empowerment and will continue to do so in the foreseeable future. Digital empowerment refers to a person's ability to effectively use digital technologies to form life skills that reinforce their ability in the digital world⁵³. The following provides the key areas in which Digital Enablement has empowered the workforce of many companies in this digital age^{54,55}:

 <p>Mobility</p>	<p>Ability to work on-the-go leads to higher productivity and Digital Enablement has empowered a huge number of people to work from where they want to work.</p>	 <p>Innovation</p>	<p>Digital Enablement allows employees to understand needs, ideate propositions, develop prototypes, experiment options, test functionality and deploy products and services in a more effective, faster and safer environment.</p>
 <p>Connectivity</p>	<p>Wide-spread connectivity not only augments the ability for a more mobile workforce but also provides an 'always-on' environment for people enabling them to work when they want to work.</p>	 <p>Decision Making</p>	<p>Intelligent processes make it possible to streamline and make decisions very quickly and the workforce is now empowered to make data driven decisions that are fact based.</p>
 <p>Flexibility⁵⁶</p>	<p>Digital Enablement allows vast flexibility in how people carry out their work enabling the workforce to carry out their work in different ways while still achieving the desired outcomes.</p>	 <p>Knowledge⁵⁷</p>	<p>With access to the right information at the right time, people can optimise their capabilities, contribution and efficiency providing leverage for the workforce to develop and unlock new opportunities</p>
 <p>Efficiency</p>	<p>Digital Enablement has automated many job functions and companies can focus human tasks on the things that are most important for the workforce to be doing.</p>	 <p>Well being</p>	<p>Digital Enablement drives productivity and well being, and the workforce at all levels are now more empowered to shape the work environment that is most conducive for them.</p>

Spotlight

Maxis

Empowering People & Transforming the Organisation

Maxis continues to equip the workforce with critical business and technology skills through Maxis Academy, their online platform which was especially important during movement restrictions when employees were working from home. In addition, the people of Maxis have also fully embraced the agile way of working to produce meaningful business outcomes.

Key Digital Enablement initiatives include:



Accelerated the Development of Talents & Leaders

Equipped its workforce to be Digital First in upskilling individual data & digital fluency, enabling a digital Maxis through Maxis Academy and Maxis Digital Citizen Programme.



Embraced Agile Ways of Working (WoW)

Cultivated a Digital Channels Tribe, a cross-functional team set-up to focus on the delivery of consistent improvements to digital channel capabilities and fully embrace agile WoW with cross-divisional participation.



Sustainable Tech Employer Branding

Focused on developing visibility and cultivating a strong tech employer branding, through investment in Young Talent and initiatives in three different segments: Tech, Women in Tech and Young Leaders.

Outcomes achieved:



>135,000
employee learning hours



Digital Dexterity Index

86%
for Maxis Digital Citizen Pilot Programme

Voice of Maxis survey showed

92%
of employees are proud to work for Maxis



1.4X increase
in Technology Scholarship Recipients

3.2 Creating a Mobile and Connected Workforce

Providing the ability for people to work from **where** they want to, and **when** it suits them (within acceptable boundaries of course!), has become table stakes in this post pandemic digital age and Digital Enablement lies at the center of this seismic shift in ways of working. The quest for mobility and connectivity stem from a few factors:



The Pandemic has taught us that for companies to survive, **work must go on** and this requires the ability for a large segment of the workforce to be able to work remotely and stay connected most of the time regardless of physical and movement constraints.



There is a seismic **shift in workforce, workplace and work styles** and people have started to embrace the new normal. The workforce in many instances is demanding the ability to work from where they want, when they want.



Companies have recognised that as their businesses expand, regionalise and globalise, there are huge benefits to having a workforce that can be situated close to where their core activities are but remain linked to the operations 'nerve centre', giving rise to a **workforce that is mobile yet remaining fully connected**.



With the increasing focus on ESG, companies are attempting to **manage their carbon footprint** and remote working and connectivity provides the opportunity to do so.



Mobility and connectivity through Digital Enablement has given many companies the ability to **expand their workforce and its reach overnight**. Having access to a geographically dispersed and connected labour pool, including gig talent, means companies can scale up quickly to meet demands⁵⁸.



Examples

Scot

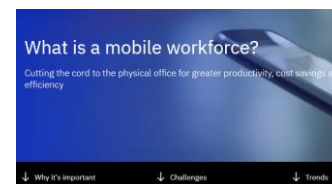
Scot, a low-cost carrier won 'Best HR Digital Transformation Strategy' at the Employee Experience Awards 2022. Read this article on how they apply technology to create a mobile workforce.



Source: *Scot's leveraging technology to deepen engagements with its highly distributed workforce*

Importance of a Mobile Workforce

This article highlights the objective and importance of mobile workforce, and the current and future trends of mobile workforce.



Source: *What is a mobile workforce?*

Prerequisites for effective mobile workforce

Ability to work from different locations and at different times while still delivering outcomes

Skilled in their areas of focus thus requiring minimal on-the-job supervision

Provided with relevant applications and digital tools that can be accessed on-the-go

Connected cloud based services to ensure real time or information on demand

Provided with the means for seamless secured connectivity wherever the workforce is

Performance measurement weighted towards outcomes

Have the discipline and capability to self manage time and outcomes effectively

Opportunities to physically connect with teams across the company to inculcate values & desired culture



Permodalan Nasional Berhad (PNB)

Implementation of cloud-based collaboration platform

PNB is one of the largest fund management companies in Malaysia, serving 14.5 million account holders and has 1,748 employees. The scale of the company's operations led to several pain points in administration and work flows - where the technology team was inundated with mundane tasks instead of focussing on value-adding services. PNB decided to embark on a technology overhaul as part of a 5-year plan to strengthen efficiencies and drive performance. One of the things introduced was a collaboration platform which allowed PNB to:

- Perform file sharing across multiple devices and users, not limited by size or storage capacity
- Collaborate regardless of device or operating system
- Eliminate the need for version control
- Employees to work anywhere and collaborate more often

Moving forward, PNB will continue to improve the functionalities of the platform, which includes approving files online, hosting meetings and town halls virtually, and ensure access to important documents and files anywhere on any device. To read more, click on the link [here](#).

Case study courtesy of Microsoft Malaysia



Examples

Holcim (Schweiz) AG⁵⁹

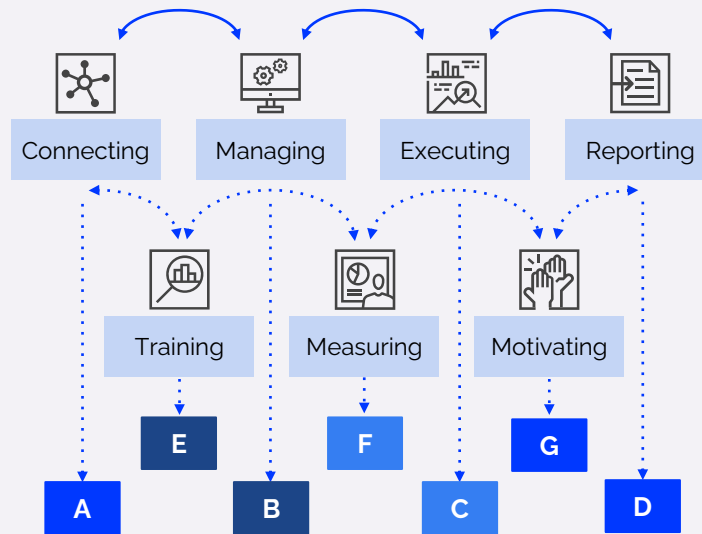
Holcim's Italy and Switzerland branches have 1,500 mobile workers spread across 70 locations making communication across the organisation challenging. Holcim implemented a digital communication platform that reached workers across manufacturing plants and in remote locations. This distributed information quickly from small to large, dispersed teams in over 70 locations catering to plant workers with varying degrees of digital literacy as well as multiple languages. Read [more here](#).



Creating a mobile and connected workforce has its own challenges. The following chart illustrates how Digital Enablement can support the set up of a mobile and connected workforce environment while addressing some of the more pertinent challenges⁶⁰:

Digitally enabling a mobile and connected workforce

Ecosystem



Digital Enablement

A) Connecting

- Reliable and secure access to internet, mobile networks and private networks
- Compatible devices for connectivity
- Simple yet secure process to establish connectivity
- Cloud access to manage data retrieval and repository

B) Managing

- Mobile workforce management tools
- Scheduling, despatching, communicating
- Tracking of outcomes
- Feedback & on-site support capabilities

C) Executing

- Productivity digital tools (e.g. Task management, workflow management, capacity management)
- Collaboration tools (workspace, boards)
- Communication tools (video conferencing, messaging, etc)
- Security (cybersecurity, firewalls, etc)
- Technical digital applications (job specific apps that interface with the company's infrastructure)

D) Reporting

- Documentation tools
- Applications that interface with corporate reporting system
- Feedback & sentiment analysis
- Outcome tracking & reporting
- Dashboards
- Analytic tools

E) Training

- Online guides and manuals
- Interactive checklists for troubleshooting
- Automated query management (e.g. chatbots)
- Structured online curriculums for skilling and upskilling
- On-demand data management

F) Measuring

- Workforce or individual productivity monitoring tools
- Self evaluation tools
- Customer feedback tools
- ERP applications and/or fleet management tools

G) Motivating

- Staff sentiment analysis
- Gamification and rewards
- Instant feedback loops
- On-call supervisors & coaches
- Periodic counselling & 'in-office' collaboration

3.3 Enhancing Workforce Flexibility and Efficiency

In addition to empowering where and when employees of companies choose to work, Digital Enablement has also driven significant changes to empowering **how** the workforce carry out their day to day tasks⁶¹. Flexibility and efficiency comes in many forms in a digitally enabled environment including:



Examples

Automation

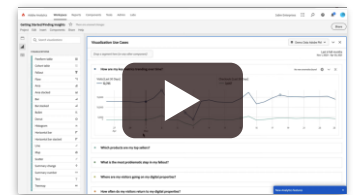
Carries out repetitive tasks and frees up time for the workforce to carry out other more meaningful and fulfilling activities



Source: [Nordic Workplace Efficiency – The Next wave of Digital Transformation](#)

Analytics & Big Data

Provides insights that enable the workforce to channel their efforts and overall resources to areas that matter most, increasing efficiency and productivity



Source: [Visualization Use Cases](#)

Digital Productivity Tools

Provides workforce with the ability to work differently and more flexibly to achieve desired outcomes.



Source: [Top 14 Ways how Modern Technology Increase Productivity in the Workplace](#)

Artificial Intelligence

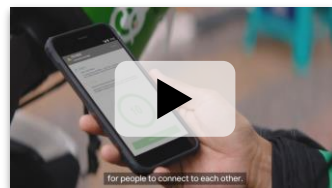
Magnifies the efficiency of tasks and provide higher levels of accuracy.



Source: [Best of Business AI: DHL Customer Story](#)

Cloud Computing

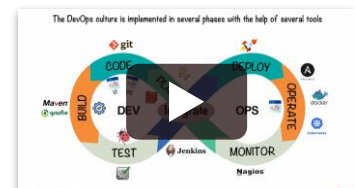
Provides workforce access to real time data 'on tap', an always-on secure system minimising downtime and able to scale up efficiently



Source: [Over 18 months super app Gojek grows 900x bigger with Google Cloud](#)

Workload Management

More efficient management of workload for employees via tools that distribute tasks, track progress, and ensure development objectives are met.



Source: [DevOps In 5 Minutes](#)






Workforce flexibility stems from the choices people make on how they want to work to produce the desired outcomes⁶². With the advent of Digital Enablement, the workforce is provided with a myriad of choices that empower them to drive productivity and efficiency.

3.4 Enabling Better Decision Making and Driving Innovation

Digital Enablement has visibly shifted the dynamics of decision making, providing the workforce with more empowerment in defining, identifying, assessing, implementing, and evaluating propositions and options⁶³. This in turn has also accelerated innovation amongst the workforce as Digital Enablement catalyses ideation, advocacy & screening, experimentation, commercialisation, diffusion & implementation⁶⁴. The following section provides further considerations on how Digital Enablement can empower people to make better decisions and drive innovation.

Decision Making through Digital Enablement⁶⁵

Data Driven Decision Making (DDDM⁶⁶) provides the workforce with fact based input to better assess and consider decisions. At the heart of DDDM is the ability to manage huge volumes of gathered data, both structured and unstructured, and this capability provides the following benefits:

-  Making confident decisions
-  Reduce biases
-  Deep dive into unresolved issues and questions
-  Set outcomes that are measurable
-  Improve various functional processes within the company using data analytics

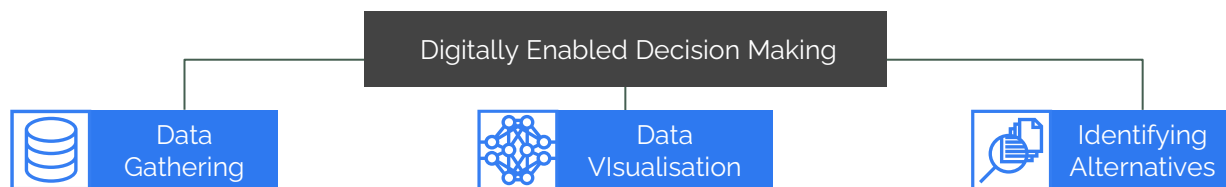


Example

Coca Cola uses data to drive strategic business decisions across its value chain to stay relevant. It was able to generate invaluable insights through its connected 'freestyle fountain machine', which allows Coca Cola to gather data to understand customer's preferences and trends in different regions.

This has allowed Coca Cola to innovate and launch new products that match the ever changing customer's demands. Read more [here](#).

Source: Coca-Cola Leverages Data Analytics to Drive Innovation





Data Gathering⁶⁷

Whilst common data gathering methods such as observation, transaction tracking, surveys, interviews and focus groups are still widely used, Digital Enablement has provided additional means to gather critical data, some examples of which are as follows:

- **Sensor technology** - together with IoT, provides a rich amount of data that can be collected from source and on a real time basis to augment DDDM efforts
- **Social media** - provides a huge amount of unstructured data that could provide critical data points for decision making
- **Online tracking** - pixels and cookies track users online behaviour across websites and provide insight into what content they're interested in and typically engage with



Data Visualisation

Data analytics and visualisation is a complex process that can involve data scientists, data engineers, business users, developers and data management teams⁶⁸.

Visualisation creates data visuals, dashboards and reports; along with capabilities for managing data visualisation and dashboard design process to effectively communicate results of data analytics.



Hexa Foods

Hexa Foods is a Malaysian company which supplies spices to local and overseas markets. In order to impose strict food safety and quality standards, Hexa Foods utilises IoT technology to collect data in their production process for monitoring and control purposes. The tools used by Hexa Foods include:

- **Smart thermal imager sensors** - ensure optimum roasting levels
- **Smart weighing system** - measure output weight and flag exceptions
- **Computer vision system** - evaluate product quality, eg. determine quality of chilli based on average size and colour

Backed by the success during the implementation phase, the owners subsequently founded Hexa IoT Sdn Bhd, a local IoT solutions company. The key markets of the Company are the manufacturing, agriculture, and aquaculture industry, and aims to push wider adoption of IoT solutions among SMEs.

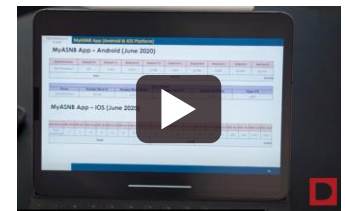
Source: *From spices to IoT*



MDEC

Data Driven Enterprise Programme

Watch testimonials from PNB, Hartalega, Mah Sing, and MIA on their journey to become Data Driven Enterprises and hear about MDEC's Data Driven Enterprise Programme



Source: *Data Driven Enterprise Program*

Identifying Alternatives⁶⁹

Machine Learning and Artificial Intelligence is now playing a more important role in formulating alternatives and options based on gathered data. Various permutations are generated based on parameters that are relevant to the company or the business environment, providing the workforce with clearer, faster and fact based choices to deliberate on including:

- Decisions in business operations
- Complex problem solving
- Strategic changes
- Customer related decisions
- Performance assessment


Driving Innovation through Digital Enablement

Digital Enablement has changed the way companies conduct their research and development and has provided companies with means to accelerate innovation. Digital tools provide the workforce with enablers that support the various elements of innovation, reducing friction and creating a conducive and safe ecosystem for creativity and experimentation. The following highlights a few of the more notable areas in which Digital Enablement has empowered the workforce to drive innovation:

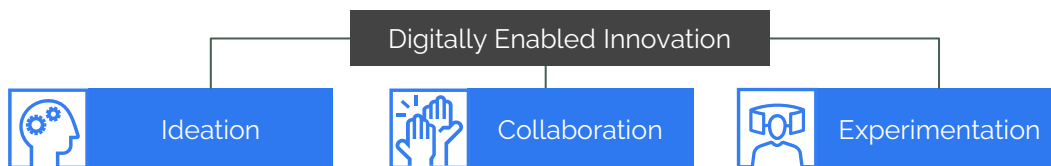
Examples

Future of Digital Innovation

Hear from IDC on the Future of Digital Innovation and how business leaders can be successful in the growing digital economy.



Source: Learn about the Future of Digital Innovation with IDC





Ideation

Ideation represents a key element of the Design Thinking process in which ideas are conceived, designed and advocated prior to being assessed and screened. Digital Enablement provides various tools and platforms that support the ideation process with the following features⁷⁰:

- ✓ Tools to collate ideas generated
- ✓ Aggregation and ranking of ideas
- ✓ Anonymity where required, to stimulate 'no-holds-barred' idea generation
- ✓ Follow ups and validation workflows to ensure ideas are further developed



Collaboration

Collaboration has the power to spark innovation in the workplace because everyone brings a unique set of knowledge and skills to the table. Digital Enablement has provided means to elevate collaboration in the workplace in the following areas⁷¹:

- Team and Community, Network, Cloud and Video collaboration
- **Metaverse - simulated digital environment** that uses AR, VR and blockchain, along with concepts from social media, to create spaces for rich user interaction mimicking the real world⁷². As the metaverse develops, it will open up new opportunities to collaborate in areas such as employee engagement, gaming and social interaction among others.



Example

UNICEF Global Innovation Centre uses U-Report - a youth engagement and communication platform at global scale to enable hundreds of committees to respond rapidly to emergencies. Members can create new workflows and collaborate on existing workflows, which contains all relevant documents on the same platform.



Source: [UNICEF + Trello](#)



Example

UnderArmour, an American sports equipment company created a virtual conference room to collaborate and innovate effectively on new products during the Pandemic. Watch this [video](#) to learn more.

Spotlight

Metaverse in Action

PwC's Metaverse (Global Campus) provides a new way of working, collaborating and connecting employees in and out of office.



Source: [PwC collaborating through the Metaverse](#)

Experimentation⁷³

Experimentation is vital for innovation as the systematic testing of ideas enables a company to create and refine its products. New technologies like computer simulation and rapid prototyping allow experiments to be carried out faster and at a much lesser cost as illustrated by the following:

- **Digital Twin** - is a virtual representation of an object or system that spans its lifecycle, updated from real-time data, and uses simulation, machine learning and reasoning to help decision-making⁷⁴. Digital twins provide significantly more capability to experiment than traditional simulations and thus is fast becoming a catalyst for the innovation process in many companies.

Examples

Digital Twin in F1 Racing

Watch this video about implementation of digital twin in a F1 team.



Source: [Digital Twins in F1™ Racing Throw Down Big Gains for Mercedes-AMG Petronas Motorsport](#)

Digital Twin in Healthcare Industry

Watch this video on how digital twins can be implemented in the healthcare industry.



Source: [Applications of Digital Twin to Transform the Healthcare Industry](#)

- **AR, VR & MR** - these are terms that have now become commonplace in prototyping and simulation and represent the ability to immerse users in a real-time 3D virtual world, creating a truly unique experience.

Examples

Virtual Reality in Surgeon Training

Johnson & Johnson Institute and Osso VR collaborated and built a surgical training experiences in virtual reality



Source: [How Johnson & Johnson Uses Virtual Reality for Training](#)

Cargo Loading Simulation

DHL's dynamic virtual reality training module allows trainees to learn best practices in cargo loading..



Source: [DHL Virtual Reality Training](#)

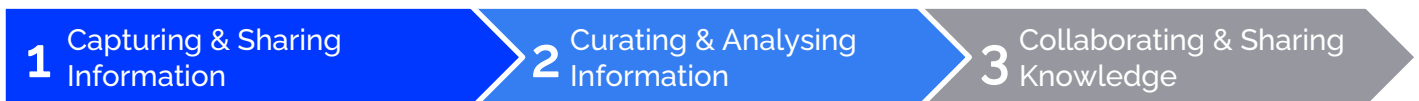
3.5 Enhancing Knowledge Management & Corporate Memory

Accumulating, storing and effectively sharing company knowledge (corporate memory) allows companies to create a culture that can significantly improve efficiency and employee happiness. Companies are faced with two categories of knowledge, **explicit knowledge** and **tacit knowledge**⁷⁵ including prior data and innovation, trade secrets, published references, intellectual property, internally generated documentation and details of notable events and relationships,

The following knowledge management attributes are critical to empower people to be more effective, efficient and fulfilled in the workplace⁷⁶ :

- | | | | |
|--|--|---|---|
|  | Continuous learning and development |  | Enable regular knowledge transfer |
|  | Support better decision making |  | Instant access to relevant information |
|  | Foster collaboration and positive work culture |  | Enable consistency in ways of working |
|  | Drive innovative thinking |  | Elevate the ability to leverage off best practices |
|  | Prevent repeating same mistakes |  | Speed up employee onboarding, familiarisation and skills transfer |

Digital Enablement to support knowledge management has progressed and developed significantly in this digital age and a myriad of knowledge management systems, tools and technologies are currently being deployed by many companies to support the empowerment of their workforce through knowledge as described below:



1 Capturing & Storing Information

1 2 3

Effectively capturing and storing experiences and information is the first step in any robust knowledge management effort. Capturing digital information from source and the ability to digitise information can be achieved through the following⁷⁷:

Automated knowledge capturing capabilities that enable digitised data capture from source which become invaluable for knowledge management. These include but are not limited to the following:

Sensor technology for equipment allow data capture at source providing performance statistics and trends for analysis and to continuously improve products, features and services

Digitalised feedback such as digital customer feedback, employee feedback, project monitoring and dashboards, market intelligence and sentiment analysis tools provide a rich repository of knowledge to pinpoint areas of weakness

Document management systems allow for collation of large amounts of electronic forms and reports into structured and easily retrievable formats

Cloud storage and other digital storage provide the ability to safely archive and store huge amounts of information that can be retrieved on demand.

Digitisation of knowledge and data that has been captured in analogue and unstructured form is a critical effort as it thereon facilitates the use of Digital Enablement to store, curate, analyse and retrieve these types of information efficiently. There are many technologies that support such digitisation efforts, including but not limited to the following:

Advanced Optical Character Recognition (OCR) technologies that enable the conversion of text from various sources (e.g. paper documents, written text, old manuals etc.) into indexable and searchable digitised formats

Analogue to Digital Converters for converting analogue audio and video information into digital formats which provide the ability to stratify these sources of knowledge into a structured and easily retrievable manner

Speech to text recognition technologies that enable the conversion of audio into text and captioning, which can then be curated and stored for easy and quick retrieval and analysis

2 Curating & Analysing Information

1 2 3

Digital Enablement has also accelerated the ability to curate vast amounts of content and information captured and has additionally provided the tools for people to analyse this captured information in many ways. Examples of these capabilities include:

- Data curation tools to support curation activities (collection, wrangling, preservation) to create datasets that generate FAIR (Findable, Accessible, Interoperable, and Reusable) and analysable data. These tools optimise the pre-processing steps of data management, assure data integrity and usability⁷⁸
- Data analytics tools provide the ability to retrieve data, analyse trends and visualise outcomes. These tools and capabilities have been covered in the sections above.

3 Collaborating & Sharing Knowledge

1 2 3

Effective knowledge management is all about collaboration and sharing knowledge across functions, lines of businesses, geographies and even across special communities of interest while providing the means for the workforce to leverage off that knowledge to improve and/or change ways of working and achieve better outcomes⁷⁹.

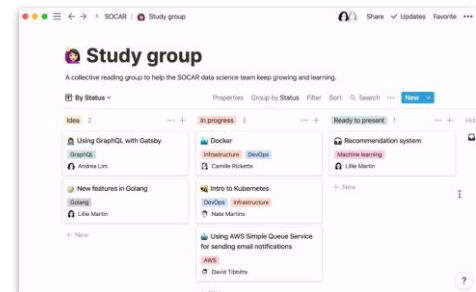


Example

Implementation of a collaborative tool among developers

SOCAR is a global car sharing platform based in South Korea. The data team uses an online platform for project management and documentation among the engineers. The landing page of the online platform includes the team's goals, current and past projects, as well as link to important tools. This enables all important project information to be documented on one Kanban board; which in turn facilitates tracking of tasks, and ensures that all tasks are being addressed.

The team also uses repeatable templates to allow learning from past decisions and increase overall efficiency. Additionally, the team runs its own study group on the platform, which enables them to learn collectively, and subsequently apply these new learnings at work.



Source: [SOCAR's documentation helps engineers learn from each other](#)

3.6 Elevating Employee Wellbeing

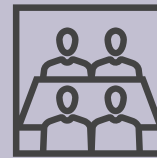
Employee wellbeing, which is defined as the overall mental, physical, emotional, and economic health of employees, is an important area of focus for high performing companies. Supporting employee well being efforts yield significant benefits including⁸⁰:

Benefits of employee well being efforts

Reduced healthcare expenses



Reduced absenteeism



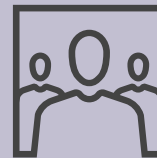
Improved employee engagement



Avoiding burnout



Heightened feelings of empowerment



Enhanced employee reputation



Companies are putting in place many initiatives to support wellbeing efforts including wellness and health screening benefits, work flexibility initiatives, on the job counselling, job safety and security and various incentives to promote a healthy lifestyle, to name a few. While addressing the wellbeing agenda is multifaceted in nature, Digital Enablement has complemented these efforts by empowering people to take wellbeing into their own hands in some respects.

The following illustrate how wellbeing is being digitally enabled:



Employee Feedback Mechanisms⁸¹

Easy to deploy and access, mobile enabled and can be 'always-on' through the advent of digital applications, enabling companies to better understand the state of morale, motivation and happiness of their workforce



Sentiment Analysis⁸²

Ability to sift through large amounts of unstructured data (like social media, news articles, online publications and internal feedback). With AI, companies can analyse what people are saying about the work environment and employee satisfaction.



Workload Management⁸³

Applications support critical aspect of workload planning, simulating the effort required (or preferred) to complete tasks and through data analytics, allocate the appropriate workload and tasks to individuals or groups of employees.



Connectivity and Support Anytime, Anywhere

Powered by Interactive manuals, online real time support in the event there is a need to consult on the job, easy video conferencing connectivity, the use of advanced AI driven chatbots and sophisticated real time collaboration tools.



Early Warning Alerts⁸⁴

Wearables and other digital biomarker apps allow for the capture of critical health indicators on a continuous basis.



Example

Use of wearables to increase workplace safety

Kinetic introduced REFLEX, a smart device about the size of cell phone, to be worn on the belt or waistband. REFLEX determines when workers are moving with correct posture, and vibrates when high risk motion occurs.

REFLEX helped companies reduce injury rates by 58%, and increase employee productivity by 5%.



Source: digi.com/customer-stories

3.7 Upskilling & Reskilling in the Digital Age

With the changing shape of the workforce, workplace and workstyles, the future of work requires people to be upskilled and/or reskilled to be relevant to the needs of the workforce of the future⁸⁵. It is a well known fact that many jobs that existed in the past will not be relevant or even exist in the near future and conversely, many jobs of the future are those that do not exist today.

While Digital Enablement is one of the catalysts for this change envisaged in the future of work, Digital Enablement also provides the accelerators required for the workforce to be reskilled or upskilled for the future. The following examples provide some perspectives on how Digital Enablement can support and drive the workforce for the future:



Examples

Upskilling & Reskilling Employees in the Digital Age

The following articles provide some key considerations on how digital enablement can support organisations in upskilling or reskilling its employees



How to empower employees with digital upskilling

By [Harvard Business Review](#)

In recent years, digital transformation initiatives have gained momentum, with organisations looking to improve their productivity and profit margins. The COVID-19 pandemic has accelerated the need for these developments and made the necessity for a digitally competent workforce more apparent than ever.

For customer requests, the requirement for employees to use digital tools has accelerated the gap between the skills people have and those they need. Services such as robotic process automation (RPA) are central technologies driving innovation and growth. As they become more available, it's increasingly apparent that a workforce that can upskill to flow with these solutions will be most prepared for new developments.

By 2025, it's estimated that some 47 million new roles will emerge because of adaptations to the division of labor between humans, machines, and algorithms. A modernised workforce – one that has expanded its human capabilities to complement automation platforms – will be able to take best advantage of the opportunities provided by this tech.

With the nature of global change increasingly unpredictable, upskilling should be a priority for your business. Not only do digital upskilling programs create a better skilled and more adaptable workforce, but they boost employee engagement and performance.

Read more at [Harvard Business Review](#)

Source: [How to Empower Employees with Digital Upskilling](#)

In Training We Trust: Reskilling And Digital Transformation

By [Forbes Business Council](#)

Michael DePrisco, Forbes Council Member, Forbes Business Council, PM2 | Membership (PwC-Based)

Mar 6 2020, 10:00am EDT

Mike DePrisco is Interim President & CEO and COO of Project Management Institute (PMI), a global association for project professionals.



Source: [Reskilling and Digital Transformation](#)

In this video, PwC shares their story on digital transformation and upskilling their workforce. To do so, PwC had to re-examine the way they worked and interacted, employee behaviour, business needs as well as technological skills. Watch this video to learn more.



Source: [How PwC is Upskilling 284,000 people](#)

Read more articles on how to upskill employees in the digital world by [Harvard Business Review](#) and [Forbes](#).

3.8 Call to Action & Useful Links



Call To Action



Digital Enablement has the tremendous ability to empower the workforce, making them more productive and engaged - companies that ignore this aspect will struggle to maintain a high performing workforce and lose competitive advantage very quickly.



Companies have to live with the fact that the workforce of the future will be mobile and will increasingly demand the ability to work from where they want, when they want. Companies must put in place Digital Enablement that will facilitate this flexibility while cultivating a complex ecosystem that promotes purpose, values and a thriving culture.



Data analytics is permeating every facet of decision making and empowering people to make fact based decisions quickly and confidently - companies must provide the workforce with necessary capabilities and digital tools or risk having an ineffective workforce over time.



The focus on well being demands that companies leverage off Digital Enablement to support workforce safety, satisfaction and feedback as well as health aspects of day to day work.



Reskilling and continuous upskilling of the workforce in the digital age is not an option.



Useful Links

- ✓ [The Impact of Digital Transformation on How We Work](#): Illustrates the benefits and challenges of digital transformation in the workplace.
- ✓ [Step-by-step guide on DDDM](#): Guidelines on collection of data based on key performance indicators (KPIs) and transforming into actionable insights.
- ✓ [Examples of how VR will help your business](#): Explains the benefit of applying virtual reality solutions in the workplace.
- ✓ [How to Improve Your Decision-Making Process With Tech](#): Details the action steps in a technology enabled decision making process.
- ✓ [Everything you need to know about agile project management](#): Details the features and benefits of agile project management.

4

Harnessing Operational Efficiencies Through Digital Enablement



4.1 Operational Efficiencies Powered by Digital Enablement

The previous chapters provided guidance on leveraging Digital Enablement to drive customer experience and to empower people. While enablement in these areas provide a significant boost to company performance and sustained outcomes, Digital Enablement has shown to be crucial to achieve operational efficiencies⁸⁶ which thereon translate to better margins and quality.

Operational efficiency is the ability of an organisation to reduce waste in time, effort and materials as much as possible, while still producing and delivering high-quality products or services. The following areas provide notable opportunities for companies to harness operational efficiencies through Digital Enablement:

1

Measuring Performance

Digital Enablement provides ways to measure various aspects of operational performance that in turn provide deep insights into areas that require attention and/or which provide opportunities for operational efficiencies

2

Transforming core operational processes

Digital Enablement provides technologies and tools that enable the transformation of how core processes are carried out, making them more streamlined, automated and cost efficient

3

Managing human capital

The advent of Digital Enablement in human capital management has led to significant efficiencies such as effective onboarding, better time management, workload allocation and development. These have become hallmarks of highly successful and attractive companies

4

Streamlining back office functions

Back office functions that are normally seen as cost centres benefit immensely from the efficiencies that Digital Enablement bring, including reducing overheads and accelerating desired outcomes

5

Enhancing safety and security

Safety and security are critical aspects for any successful business and go beyond physical safety and cyber security to areas such as supply chain and other production input security (e.g raw material). Leading companies have improved reliability and effectiveness of these safety and security aspects while reducing operational cost by deploying Digital Enablement

6

Managing compliance and surveillance

Compliance is a necessary aspect of doing business and digital tools provide various means to digitally monitor, analyse and assess various aspects of a company's adherence to its policies and procedures. This has proven to reduce cost of compliance and surveillance quite significantly in key areas of operations

7

Maintaining infrastructure efficiency

Digital Enablement has introduced many methods and tools to keep business infrastructure at optimum performance thus reducing cost of operations and maintenance.

Spotlight

Sime Darby Motors

Sime Darby Motors' Smart Aftersales

Sime Darby Motors City spans 1.3 million square feet and is the largest multi-franchise automotive complex in ASEAN. The facility boasts 165 service bays for multiple brands of vehicles. Each year, more than 81,000 vehicles are serviced in this complex. Servicing a vehicle is a complex process that involves multiple touch points, coordination of expertise, and delivery of relevant vehicle parts to ensure excellent customer experience and operational efficiency. It is also a process that traditionally involves a lot of paperwork.

Digital Enablement initiatives

Sime Darby Motors has developed a Smart Aftersales solution which transformed customer experience and improved operational efficiency through an integrated digital solution. This solution delivers the following capabilities:

- A digitally integrated solution that supports the customer journey – from service booking to delivery and payment
- A digital dashboard that provides 360-degree view of the job and vehicle location for the team to manage productivity and efficiency
- Service and relevant diagnostics documents are electronically stored and managed centrally
- Digital invoices are presented to customers via the Auto Bavaria Customer App upon completion of work, with the option for in-app online payments to improve after sales customer experience.

Outcomes



Savings of 30 minutes per job or 55,000 production hours per year.



Electronic documents are archived and available instantly rather than after 30 days post-service



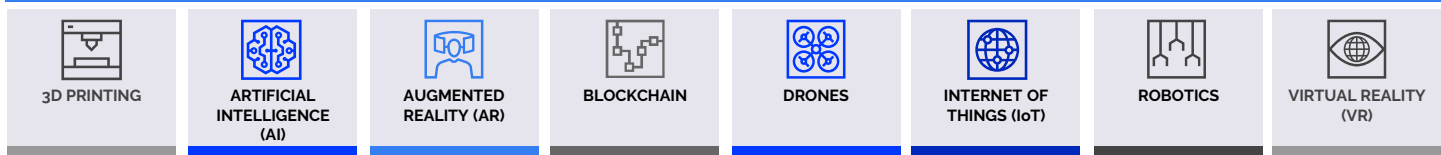
Customers can be served mostly through the Auto Bavaria Customer Mobile App



Average saving of 3.5 million sheets of paper since 2021

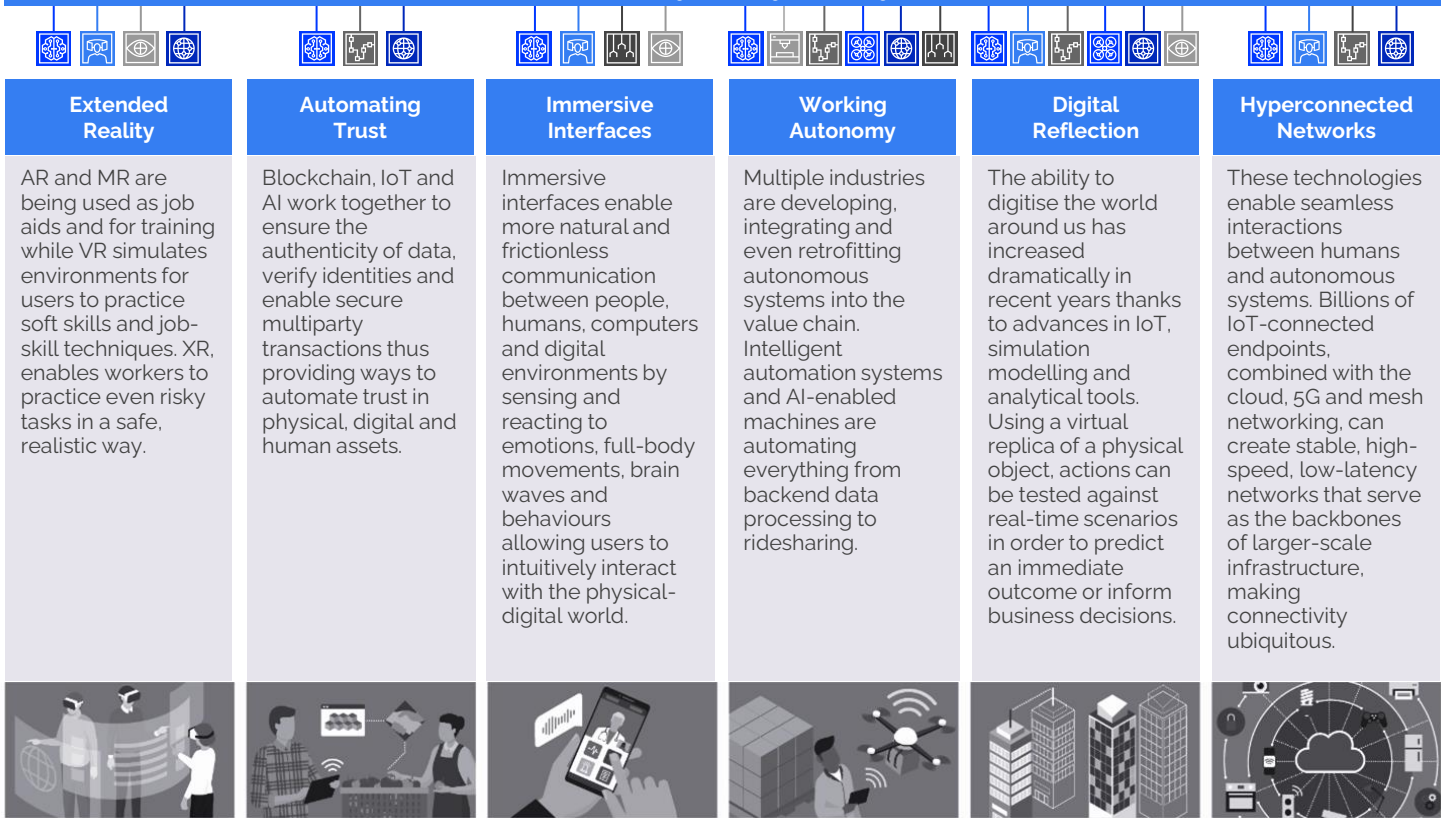
In order to harness these operational efficiencies, there are 8 essential technologies that act as building blocks to not only power Digital Enablement for operational efficiencies today, but are also accelerating convergence with new and emerging technology trends for the very near future⁸⁷:

ESSENTIAL EIGHT TECHNOLOGIES



CONVERGENCE






Real innovation occurs when these technologies come together to change how we interact with them










Whilst many of the above enablement and technologies have been mentioned in the previous chapters, the following sections provide further insights and guidance on key areas where companies can get the most out of this Digital Enablement to drive operational efficiencies.

4.2 Measuring Operational Performance

The starting point for any effort to drive operational efficiency is to know where current inefficiencies reside or where potential inefficiencies could come from in daily operations. Digital Enablement has enabled measuring, analysing and pinpointing inefficiencies to be done expediently and more reliably. The following are some considerations on how companies can use Digital Enablement to identify certain operational inefficiencies^{88,89}:

-  Measuring trends in overall input versus output
-  Measuring performance of equipment
-  Measuring productivity of the workforce
-  Quality assurance of products and services
-  Forecasting pain points

Capturing and analysing data relating to resources that are put into a production process (or service delivery process) against the outcomes over a period of time will provide a high level indication of operational inefficiencies. Digital Enablement supports the collection of critical data for these measurements and analysis as follows⁹⁰:

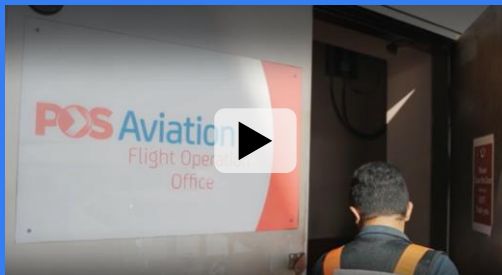
						
Automated data collection functions and process mining built into business applications, websites and mobile apps	Sensors that collect operational data from industrial equipment, vehicles and other machinery	Collection of data from information services providers and other external data sources	Tracking social media, forums, reviews sites, blogs and other online channels	Surveys, questionnaires and forms, done online, in person or by phone, email or regular mail	Focus groups and one-on-one interviews through collaboration tools	Direct observation of specific areas of remote operations through video connectivity

Through sophisticated data analytics tools with the aid of visualisation and AI, operational trends and inefficiencies can be fleshed out from the data collected at source and predictive models can be developed to even identify potential inefficiencies or failures in the future. The following case studies and illustrations from various industries show how identifying performance deficiencies through Digital Enablement allows for proactive efforts to manage operational efficiencies:

Spotlight Pos Aviation

Streamlining and automation of manual processes

Pos Aviation provides aviation logistics services, from cargo handling services to logistics solutions for e-Commerce businesses. Due to the nature of the industry, the aviation logistics industry requires extensive amounts of paperwork. With the use of innovative digital solutions, Pos Aviation has streamlined its performance analysis process and reduce time spent on manual processes. Watch this video to understand how Pos Aviation automated its processes.



Source: [Malaysian Aviation Ground Handler Helps Airline Elevate Customer service Standards, 30 Jul 2020](#)

"The solutions we have in place have led us to create an innovative culture for our employees and transform how each of us operates. All of us can now make quicker, better decisions, thus improving our service to airline customers and ultimately improving the travel experience." Woo Kam Weng: CEO Pos Aviation

Case study courtesy of Microsoft Malaysia



Examples

How sensors are used in manufacturing

A panel discussion between 3 different business leaders on how their company uses sensors everyday in their manufacturing process



Source: [How Sensors Are Used in Manufacturing](#)

Using AI to predict machine failures

Example of how AI and data science is used in predicting machine failures using industrial artificial intelligence.



Source: [Predicting Machines Failures & Optimising Maintenance using AI & Data Science](#)

4.3 Transforming Core Operational Processes

Core operational processes are key activities or cluster of activities which must be performed in an exemplary manner to ensure a company's continued performance and competitiveness because it adds primary value to an output. The following spotlight illustrates how a Malaysian PLC embarked on a digital transformation of its core operations and benefits gained from this journey.

Spotlight Sime Darby Plantation Berhad

Reimagining Plantations

For decades, the palm oil industry has been highly dependent on manual labour. The effects of the recent Pandemic and Post-Pandemic have continued to hit this industry with labour shortage which adversely affected production. As a globally integrated palm oil company, Sime Darby Plantation (SDP) sees this as an opportunity to embark on reimagining its plantation business that will radically transform its operations. A key area of focus is advanced mechanisation, automation and digitalisation of its operations.

Key Digital Enablement Initiatives

-  **Robotics:** Development of robotics technology and advanced mechanisation to address labour shortage and improve working conditions.
-  **Digital Services:** Integrate existing solutions and future digital services by building platforms.
-  **Data & Analytics:** Integrate and democratise data and insights across all businesses.
-  **Performance & Innovation Driven Culture:** New digital curriculum to train workforce in data, analytics, automation, and AI, as well as accelerate innovation through incubation and partnerships.

Targeted Outcomes



Improved Land-to-Man ratio (LMR): SDP aims to achieve optimal efficiency at 17.5ha : 1 by the end of 2024. This translates to a reduction of about **4,350** manual workers in the Malaysian operations over a period of 2.5 years.



Complete mechanisation: By end of 2023, all non-harvesting work in SDP's Malaysian operations will be fully mechanised.

There are numerous opportunities for Digital Enablement to harness efficiency from core operations. Some of the more pronounced areas include⁹¹:



1. Intelligent Automation - Reducing time, effort and cost on repetitive tasks⁹²

Robotics Process Automation (RPA) has enabled automation at the 'front end' of processes with minimal reconfiguration of back end systems, a more shallow learning curve, faster implementation cycle and seamless combination with other productivity applications. Intelligent automation has now harnessed the power of AI which expands the possibilities of business process automation to include nearly any scenario.

The following spotlight illustrates the use of RPA and AI in core operational processes:

Spotlight Telekom Malaysia

Since 2020, TM has been 'Going Digital' across its core functions by leveraging different means of automation such as RPA and AI to simplify and digitalise processes and outcomes. This in turn has enabled its people to improve their productivity and work efficiency by focussing more on innovating new ideas and upskilling for more strategic work. This was particularly useful during the Pandemic where TM enabled customer-facing teams with more proactive ticket automation to resolve internet connectivity issues more effectively so that TM customers stay connected. To-date, TM has completed 94 RPA deployments and achieved the following milestones:



346k hours of employee time saved



85% process handling time improved



RM11 million cost avoidance

TM also upskilled internal talents to undertake 65% of the RPA development which resulted in an estimated cost savings of RM3.1million.

2. Blockchain Technology - Improving supply chain efficiency, traceability and security^{93,94}

Blockchain technology allows companies to track all types of transactions more securely and transparently:

- Makes global supply chains more efficient by allowing companies to complete transactions directly and without third parties thus facilitating increased integration of financial and logistics services while enabling greater data collaboration between stakeholders
- Integrated payment solutions reduce the time between ordering and payment processing, ensuring proper and timely movement of products
- Blockchain and smart contracts help companies enhance compliance, reduce legal fees and fines for late payment of taxes, and curb counterfeiting and fraud. Organisations can integrate blockchain with radio-frequency identification (RFID) tags, which use electromagnetic fields to identify and track items
- Sourcing components or raw materials, which can be traced back to their origin, increasing accountability and transparency, and mitigating illegal activity

The following illustrates the impact of using blockchain technology in improving supply chain efficiency:



Examples

Use of Blockchain Technology in the Supply Chain

The scale of Walmart Canada's supply chain has required manual reconciliations of its freight carriers' invoices which have led to significant data discrepancies, higher administrative costs and payment delays. With the use of blockchain technology, the company managed to optimise its operational efficiency and improve the level of trust through end-to-end supply chain visibility. Watch this video to find out more,



Source:
[Blockchain Technology in Supply Chain | How Walmart saves Millions of \\$ by Blockchain](#)

Sheldon Barb Farms has implemented blockchain technology to promote transparency within the supply chain of its produce. Through the tagged alphanumeric code/QR code, consumers are able to view information about the farm, product itself and the entire provenance of the product. Check out this video to see this in action.



Source: [View a Real Example of Blockchain Use in the Supply Chain](#)

3. Robotics and Drone technology - Improving core operations productivity^{95,96}

Robotics improves the overall efficiency of a manufacturing process by creating efficient means of completing production tasks. Unlike humans, robots do not get tired and can work for days while meeting the quality and quantity requirements simultaneously. Modern industrial robots have the ability to adapt and even take critical decisions during operations.

Following are some of the benefits of robotics in terms of productivity:




Complementing the robotics revolution is Drone technology which has evolved significantly and is now being used to drive efficiency in many core operational activities such as surveillance, inspections, mapping and surveying, search and rescue, and even delivery of products. The following examples illustrate usage of robotics and drone technology in driving operational efficiencies:

Examples

Improving productivity with drones


Read this article on how Aerodyne utilised drones equipped with hyperspectral cameras, sensors, IoTs and AI to measure and collect various data metrics which led to higher productivity levels in plantations.



Source: [AGRIMOR: Empowering Precision Agriculture in Malaysia & Southeast Asia](#)

Boosting efficiencies with robots

DHL implemented the use of Locus Robotics' robots in their warehouses to speed up picking products and track productivity levels of the staff in real-time.



Source: [Locus Robotics Exceeds Expectations at DHL Life Science Facility with Warehouse Automation](#)

DHL
Our site is shipping medical implants for next day surgeries.

4. IIoT - Elevating manufacturing efficiency^{97,98,99}

The industrial internet of things (IIoT) refers to the extension and use of the IoT in industrial sectors and applications. With a strong focus on machine-to-machine (M2M) communication, big data, and machine learning, IIoT goes beyond the normal inter-networking of consumer devices usually associated with the IoT to the intersection of information technology (IT) and operational technology (OT).

Operational efficiencies that can be harnessed from IIoT include:

Increased productivity and uptime	Improved process efficiencies	Accelerated innovation	Reduced asset downtime	Enhanced operational efficiency
Creates end-to-end operational visibility	Improved product quality	Reduced operating costs	Optimised production scheduling	Improved overall equipment effectiveness (OEE)

The following examples illustrate how IIoT is enabling efficiencies in manufacturing processes:



Examples

Smart agriculture & manufacturing through IIoT

Pinnewealth

The deployment of IoT in Pinnewealth's pineapple farms has provided more business insights, and allowed remote monitoring of their farms. With the use of IoT sensors, the readings for pH, nitrogen, phosphorus and potassium are no longer required to be performed manually.

Source: [HOW MALAYSIA'S INDUSTRIES ARE TAPPING IOT](#)



Schneider Electric

The adoption of IoT amongst other technologies has allowed Schneider Electric to turn their 60-year old factory site into a smart factory. Through the use of these technologies, the Company is able to enjoy savings from reduced water and energy usage as well as a reduction in time to repair faulty machinery.

Source: [See Why This Smart Factory is One of the Top Manufacturing Sites | Schneider Electric](#)



5. 3D Printing - Boosting production efficiency¹⁰⁰

3D printing technology uses an additive manufacturing process to create three-dimensional solid objects. Almost every sector, starting from pharma to jewellery and industrial, has started adopting this technology. Additive manufacturing can help manufacturers boost production efficiency in the following ways:

- ✓ On demand production of complex items when required, thus reducing the need for large scale production facilities
- ✓ Improving time to market from design to production especially for non standard products or part
- ✓ Overall production costs is lower for smaller scale production of specialised items and supports better just in time production, lower wastage and production flexibility
- ✓ Ability to test and rework designs based on 3d prototypes enables better control of quality and defects management prior to final production

The following illustrates how 3D printing is supporting certain industries:



Examples

On-demand manufacturing in the clothing & automotive industries

Softwear's automated 3D printing robots allow for on-demand manufacturing, which can reduce wastage for businesses and allow smaller-sized merchants to operate without holding inventories.



Source: [How 3D Printing Could Change the Garment Industry](#)

Ford has turned to additive manufacturing for certain parts, which has allowed the company to perform rapid prototyping, reduce its manufacturing times and costs.



Source: [Ford is 3D Printing Automotive Parts for Mass Production: The Cool Parts Show S2E1](#)

4.4 Managing Human Capital

Human capital or human resources management continues to make up a large portion of the cost of operations of many organisations. Human Resource Management and the associated talent management costs normally comprise the following¹⁰¹:

- Recruitment costs
- Salary, allowances & benefits management
- Retention costs
- Training & development
- HR administration
- Workforce management

A survey on HR leaders in the US by PwC has also highlighted the following top 10 HR challenges today¹⁰²:



39%

HR insights /
data analytics



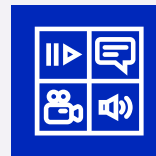
39%

Recruiting /
hiring



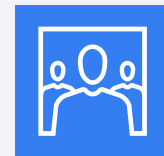
36%

Cloud
transformation /
modernisation
of HR systems



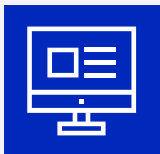
28%

Learning and
development /
employee upskilling



27%

Retention of
key talent



24%

Remote or
hybrid work



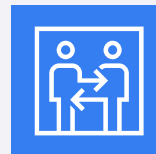
22%

Benefits



19%

Diversity, equity
and inclusion



19%

Manager and
employee self-
service capabilities






16%


Compensation

Companies should consider the following Digital Enablement in their talent acquisition and HR administration processes to reap sizeable operational efficiencies and benefits:

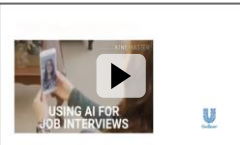


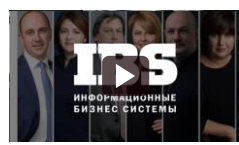
Digital Enablement in talent acquisition¹⁰³

In order to avoid lengthy and laborious talent sourcing and acquisition processes, many companies are now deploying digital tools to complement these processes:

 <p>Recruitment needs, sourcing and matching People analytics - understanding resource gaps and pinpoint job requirements much better.</p> <p>Digital assistants enhance ability to write digital recruitment ads specific to the skills required.</p> <p>AI and skills matching tools accelerate matching of potential candidate capabilities to job requirements</p>	 <p>Candidate interaction, assessment & interviewing Seamless remote conferencing and real time assessment centres with interactive online assessment tools enable efficient competency assessment and interviews</p> <p>Intelligent chatbots enable candidates to obtain information about applications status easily, creating a unique experience from the outset.</p>	 <p>Accelerating onboarding Online onboarding tools, interactive welcome microsites,, interactive familiarisation training and online employee support channels make onboarding of new talent much simpler and efficient.</p> <p>Ability to onboard teams that are geographically dispersed allows for very quick expansion of a workforce</p>
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Examples

<p>Greater Screening Accuracy</p> <p>The implementation of AI in Unilever's recruitment process.</p>  <p><i>Source: Unilever case Study HR case Study Unilever Recruitment AI in HR Artificial Intelligence</i></p>	<p>Transforming Talent Acquisition</p> <p>The use of AI in L'Oreal's screening process.</p>  <p><i>Source: Transforming Talent Acquisition with AI - L'Oréal Case Study</i></p>	<p>Headhunting with the Help of AI</p> <p>Overcoming the process of job hunting with the help of AI.</p>  <p><i>Source: HR Tech: AI is ready to help you hire</i></p>	<p>Improving Candidate Experience</p> <p>AI-based chatbots improved recruitment experience at IBS RPO's</p>  <p><i>Source: IBS RPO Case Study - Improving the Candidate Experience</i></p>
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Digital Enablement in HR Administration¹⁰⁴

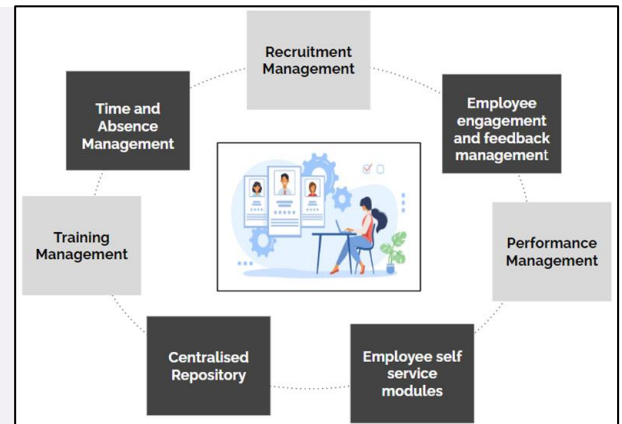
HR administration is a critical aspect of keeping a company's workforce well-managed and include the following processes:

- Personnel documentation
- Payroll and benefits administration
- Performance Management
- Compliance and training

Digital Enablement provides avenues to harness significant efficiencies from these laborious yet critical administration processes and have now been integrated into overall enterprise technology platforms. The following are a few illustrations of how Digital Enablement has improved HR processes¹⁰⁵:

Enterprise HR Information Systems (HRIS)

Today, HRIS provides the ability to harness significant efficiencies through integrated functionalities for HR administration and management as depicted in the diagram.



Examples

Automating routine HR processes

Manchester Metropolitan University has leveraged RPA technology to automate various routine HR processes,



Source: *Manchester Metropolitan University: Truly Human Automation*

Cloud computing for HR processes







Atos implemented a cloud-based document management system for HR administration



Source: *An HR Transformation Case Study: Atos*

4.5 Enhancing Safety and Security

The cost and effort to ensure adequate safety, security and business continuity across a company increases with the size, geographical dispersion and complexity of the business. Digital deployment has enabled companies to manage the overall costs and resources required to maintain safety and security across the business and in the process, increase the efficiency of this important aspect of business operations. The following illustrations provide a few areas where digital technology has made a difference¹⁰⁶:

 Physical Security	 Employee Safety	 Hazardous Tasks
Monitoring with Digital Video surveillance & AI	Wearables track biometrics, exposure limits & wellness	Drones and robots safely handle dangerous work conditions
 Data & Cyber Threats	 Early Warning Systems	 Safety Training
Enterprise identity & cyber security threat monitoring	Sensor technology, IoT & data Analytics	VR/AR simulation of disasters & safety scenarios



Examples

VR-based Training Courses

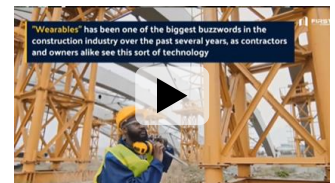
With VR-based training courses, Shell's employees are able to work more productively whilst minimising operational risks.



Source: [Shell | Increasing productivity and minimizing risk with VR.](#)

Smart Wearables

Wearables such as Smart Hardhats are able to improve the safety of their on-site employees.



Source: [Wearables in Construction - What will we actually see in use in 2022?](#)

4.6 Managing Compliance and Surveillance

As business regulations become more stringent and more voluminous, companies continue to grapple with the cost of compliance, which in many industries form a sizable portion of operating costs. The following provides some consideration for reducing compliance costs with automation and AI as featured in a recent *cio.com* publication¹⁰⁷:

Considerations for reducing compliance costs with automation and AI

RPA & NLP to manage regulation changes

RPA can be programmed to collect regulation changes. Sophisticated OCR (optical character recognition), NLP (Natural Language Processing), and AI models come in to transform regulatory texts into machine-readable texts, process the texts, understand convoluted sentences and complex regulatory terminology. AI models can then leverage the output to provide options for policy changes

Streamline regulatory reporting

AI can quickly parse unstructured regulatory data to define reporting requirements, interpret it based on past rules and situations, and produce code to trigger an automated process to access multiple company resources to build the reports. This approach to regulatory intelligence is gaining traction to support Financial Services reporting and Life Sciences companies where submissions are required for new product approvals.

Shorten review process

AI is now used to scan content and determine compliance more quickly and efficiently. In some cases, **AI bots** are even being used to edit and write regulation-compliant marketing copy.

Reduce errors in transaction monitoring

By integrating AI into legacy transaction monitoring systems, erroneous compliance alerts can be minimised and review costs reduced. Issues that are deemed legitimate high-risk can be elevated to a compliance officer while those that are not can be automatically resolved.

Perform background & legal checks

AI and automation can streamline this process. Bots can be used to crawl the web for mention of a client and leverage sentiment analysis to flag negative content. NLP technologies can scan court documents for signs of illegal activity and media mentions most relevant for analysis.

Read more about the different ways to reduce compliance costs with AI and automation [here](#).



Examples

Ensuring quality reconciliations

Reconciliation specialist Smartstream has developed AI and ML based solutions to improve the reconciliation process, validate reporting decisions and data integrity.



Source: *SmartStream: Importance of AI & machine learning for regulatory alignment & transaction reporting*

Improving SOX compliance

PwC's solution that incorporates both AI and ML technologies to achieve a quicker and thorough review of a company's controls for SOX compliance purposes.



Source: *Transforming SOX compliance*

4.7 Maintaining Infrastructure Efficiency

In many companies, a large proportion of operational cost is made up of infrastructure, whether in the form of premises or equipment. Digital Enablement has supported the efficient maintenance of infrastructure while reducing costs of repairs, maintenance and overall opportunity costs in the event of breakdowns and damage as illustrated below¹⁰⁸:

- 1 The **IoT and Sensor technology** have enabled building systems and equipment to capture and send performance data on an ongoing basis to be analysed by sophisticated digital tools to determine the 'health' of the equipment and predict the need for maintenance or provide early warning alerts.
- 2 **Digital maintenance software** makes it easy to calculate important KPIs and advanced metrics from assets eliminating redundancies and fine-tuning maintenance practices to cut costs.
- 3 Having an **information hub available in the cloud** that details the respective asset history can speed up the process of fixing a piece of equipment if it goes down.
- 4 **VR and AR simulations** as well as **cloud based interactive and intelligent troubleshooting software** ensure that maintenance teams are well equipped to handle their tasks in various scenarios.
- 5 Creating a **digital inventory of parts** eliminates reliance on messy and often inaccurate pen and paper inventory tracking. Having a firm handle on stock levels saves everyone time and money. .



Examples



Predicting machine failures through IoT

With the use of IoT technology and sensors, Mitsubishi Elevator Europe is able to predict elevator breakdowns, which has reduced their costs whilst ensuring customer satisfaction.

Source: *Mitsubishi Elevator Europe implements a predictive maintenance experience with a mobile IoT solution*



Creating predictive maintenance solutions

ENGIE Digital has used a combination of cloud-based solutions and machine learning to develop preventive maintenance models for its Group's power plants as well as its customers.

Source: *ENGIE Digital Uses Amazon SageMaker for Predictive Maintenance at Power Plants*

4.8 Call to Action & Useful Links



Call To Action



Regardless of the nature of business, industry or size, companies must be poised to harness the power of Digital Enablement to enhance operational efficiencies - those that don't will be left with dwindling margins and eroding performance over time compared to digital peers.



Most aspects of business operations will benefit from digital adoption, from front office and core operations to back office functions across geographies. Companies must ensure connectivity and interoperability of various Digital Enablement tools and platforms across the company's value chain to harness full benefits



Managing disruption and change will be key to successful digitalisation of core operations



Digital operations transformation is a complex undertaking - companies will face "make or buy" decisions on new technology and platforms and this will require leadership, thorough understanding of in house capability and resilience to manage such demanding endeavours



While reskilling of people is critical in the digital transformation of operations, companies need to address the issue of potential redundancies head on to harness the full benefits of digitalisation of operations



Companies should be aware of emerging trends and tech that could revolutionise operations



Useful Links

- ✓ [Intelligent Operations Maturity Assessment](#): An assessment to understand the maturity of your organisation's operations.
- ✓ [How manufacturing can thrive in a digital world and lead a sustainable revolution](#): This study illustrates the key challenges faced by manufacturers due to the disruptive nature of Fourth Industrial Revolution technologies.
- ✓ [Executive checklist: Operational efficiency](#): A checklist to assess opportunities to improve the efficiency of operations.
- ✓ [Driving Manufacturing Efficiency through Digital Transformation](#): This video demonstrates how industry 4.0 technologies can enable manufacturers to boost their efficiency as well as productivity levels.

5

Creating New Business Models Through Digital Enablement



5.1 New Business Models in a Digital World

Digital Enablement has clearly demonstrated huge benefits in the three critical areas of customer experience, empowering people and operational efficiency. The combination and convergence of these three elements, augmented by innovation and creativity (and some luck!) have enabled new business models to be defined and successfully deployed, disrupting the way business is conducted.

These new digitally enabled business models have provided an avenue for new or incremental revenue streams, opened up access to new segments of customer, shaped customer behaviours, created new demand for products and services that didn't exist in the past and thereon shaped the workforce, workplace and workstyles in many companies.

There are many factors that are driving the transformation and disruption of traditional business models through Digital Enablement including the following:

-  The advent of digitisation, digitalisation and digital transformation has created (and continues to create) new and improved ways to produce and deliver products and services across the business value chain
-  The quest for higher profitability (and in some cases maintaining profitability) in a more competitive business environment has resulted in companies embracing Digital Enablement to drive efficiencies across their businesses
-  The desire for higher productivity in a challenging talent and workforce environment has resulted in many companies embracing Digital Enablement to drive productivity
-  The search for new revenue streams and markets has driven innovation using Digital Enablement to deliver and serve traditional products and services in innovative ways
-  The Covid-19 pandemic has accelerated the adoption of digital adoption across business and society while shaping new consumer behaviours. Companies need to embrace these digital adoption trends in their product and services portfolios to be relevant
-  Geopolitical shifts have necessitated the adoption of Digital Enablement by companies with regional and global reach to be relevant to their markets and stakeholders¹⁰⁹
-  Digital Enablement has levelled the playing field between businesses and has created a marketplace in which large enterprise and smaller businesses can actually compete¹¹⁰

Spotlight Kenanga Investment Bank

Kenanga's New Digital Business Model



Kenanga recognised the importance of digital enablement in shaping the stockbroking sector. To future-proof Kenanga's business, the company took a bold step to pioneer a new digital stockbroking business. In 2017, Kenanga partnered with Rakuten to launch RakutenTrade, an online trading platform as part of its digital transformation journey.

In this [interview](#), Datuk Chay Wai Leong, Group Managing Director of Kenanga Investment Bank together with his team, Lee Kok Khee (Executive Director, Head of Group Equity Broking Business) and Ian Lloyd (Chief Digital Officer) share their perspectives on building Kenanga's digital business and presence. Some key takeaways from this interview include the importance of :

- Creating a seamless end-to-end digital customer experience
- Managing stakeholders from the outset
- Working collaboratively with regulators and co-creating a workable proposition
- Leveraging off partnerships to create new digital products and services that will accelerate time to market
- Attention to talent management efforts throughout the transformation

"Out of 0.3 million customers of RakutenTrade, c.55% of people who signed up on the platform have never traded before. And about 70% are below the age of 40, as such we are building out our customer base for the future. We are also able to prove that cannibalisation didn't really affect Kenanga's business, as these customers were not from the agency business" - Datuk Chay, Group MD

"We didn't let the regulations be the boundaries on what we can do. We were lucky - the regulators were very receptive to new ideas, to new propositions to be brought to the market. So it was a collaborative effort with the regulators, and new guidelines were drafted. It's quite easy to say that the rules cant allow us to do that, but we didn't allow that to be a hurdle to us." - KK Lee, ED, Head of Group Equity Broking Business

"Finding the right talent with an entrepreneurial mindset is tough in the first place, and convincing them to come into an existing organisation - either they are looking for a fintech startup, everything brand new, working from a garage style. So you have to meet them halfway, you have to give them a different way of working, you have to appeal to their sense of purpose and direction and that gives you a great building point." - Ian Lloyd, CDO

Companies have used Digital Enablement to roll out unique business models that have, and will continue to shape the business landscape, the buying behaviour of consumers, how people will consume products and services as well as the reconfiguration of the products and services themselves. The following examples demonstrate a few well known products or services with unique digitally enabled business models that have become household names:

Examples

Uber

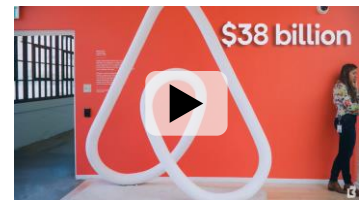
Uber's is a well known name and its has inspired many entrepreneurs and businesses globally. Learn more about how Uber's business model works with this video.



Source: [How Uber Works | Uber Business Model & How Does Uber Make Money | Code Brew Labs](#)

Airbnb

Online marketplace for lodging, primarily homestays for vacation rentals, and tourism activities.



Source: [The Rise of Airbnb: From Airbeds to Billions](#)

The common types of digitally enabled business models today that companies should consider as they re-orientate their business include:

Common types of digitally enabled business models^{111,112}



Freemium



On Demand



E-Commerce/Marketplace



Ecosystem



Access over Ownership/ Sharing



Experience

These business models can work on a standalone basis or in combination to create further unique value propositions. It must be emphasised that as Digital Enablement and customer behaviours evolve, new and unique business models will continue to develop and companies should keep abreast of these developments.

5.2 Creating New Business Models with Digital Enablement

The business models highlighted above make use of Digital Enablement in different ways. The following sections provide an elaboration on these business models, examples to illustrate the respective models and finally important considerations and indicative metrics for companies that intend to embark on these, or similar digitally enabled models.

5.2.1 Freemium Model

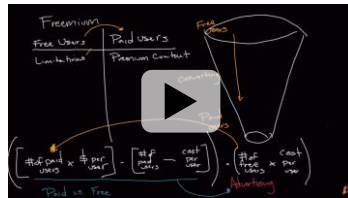
The freemium model is generally used in two ways, either the business offers a service for free and the user then becomes the product that is being sold, or users get free access to a basic, often limited version of the product (Free) with the option to upgrade to the paid version (Premium). A good example is Spotify where everyone can use the service for free (and get advertisements) but when more features and higher quality is desired, a monthly subscription is required.



Examples

Freemium Model Explained

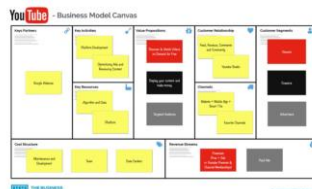
"Freemium"—a combination of "free" and "premium"—has become a common business model among Internet startups. Watch this video to understand the model.



Source: [What Makes the Freemium Model Work? | Business Models](#)

Youtube

This article explains the business model of the popular video sharing platform, and how does the company generate revenue.



Source: [Youtube Business Model](#)

SaaS Freemium Models

SaaS (Software as a Service) Freemium model is a popular model used by technology companies. This article provides 3 examples of how companies utilise this business model.



Source: [3 Famous Freemium SaaS Strategies \(And Why They're So Good\)](#)

Spotify

This article explains the business model of Spotify, one of the largest music streaming service provider worldwide.



Source: [How does Spotify work and make money - Business Model?](#)

Considerations

A Freemium business model gains the benefit of heightened brand awareness, reduced customer acquisition costs, increased brand loyalty and is a good avenue for companies to test new products and services in the market. However companies embarking on such models should carefully consider the following areas¹¹³:

1

Potential for low conversion rate as the basic (free) product may already provide adequate value to many users therefore reducing the attractiveness of upgrading to the premium (paid) version. Companies could consider adding bolt-on revenue generators such as advertisements, references to companion products or other offers to mitigate the lower than expected take up rates.

2

High drop-off rate (sometimes called churn rate) needs to be managed carefully as some premium customers may revert to the free version or drop out completely from consuming the products or services if they find that the value derived may not commensurate with the cost. Companies may consider adding features or value added services on an ongoing basis to retain customers.

3

High operations costs as the company may need to maintain a full fledged product or service even while customers are on the free version to enable seamless 'unlocking' of premium features on demand. To compensate for the high operational costs, companies can develop strategies to diversify how they earn revenue on their product's base version. For example, by contracting advertisers or selling physical products, such as brand-related merchandise, businesses can diversify their sources of revenue to offset the costs of providing free services

Indicative Metrics¹¹⁴



Daily & monthly active users



Key feature stickiness



Customer churn rate



Customer acquisition cost



Conversion rate

5.2.2 On-Demand Model

In this model, a physical product is not owned but instead a virtual product or a service is offered. On-demand works for example via online video stores, where you get the right to consume a video for a certain period of time (Amazon Video, Apple TV+, etc.). We also see the on-demand model in the gig-economy for example, where a consultant or subject matter expert can be hired and the client automatically gets charged depending on how long the support is needed.



Examples

On-Demand Economy

This article explains the features of on-demand models across various industries, and provides examples of companies using the model.



Source: *On-demand economy: A short-term trend or a high-time revolution*

BungkusiT

This local on-demand delivery service provider allows users to hire a delivery service anytime, anywhere through its application, made possible via maps API integration.



Source: *BungkusiT: Delivering packages quickly and accurately across the country*

Case study courtesy of Google Malaysia.

Considerations

On-demand models have shown significant growth and complement the omnichannel strategies of many companies, providing anything from traditional transportation and food services to performing personal and highly specific chores¹¹⁵. With on-demand models, 'access' has replaced the traditional consumer mentality of 'ownership' and company's are able to not only reduce operational cost and gain market share, but also increase their flexibility in the provisions of products and services. Companies should consider the following aspects prior to embarking on fast paced on-demand models¹¹⁶.

1

It is critical for companies to embark on a **thorough assessment of demand and supply** to establish the feasibility of this model for their business. This assessment will include analytics on customer demand as well as the ability of the company's supply chain to meet that demand, as a mismatch could result in a significantly redundant model.

2 While a technology solution/platform like a mobile application will drive the adoption of on-demand products or services, companies need to **start by reconfiguring processes** to ensure these align with the proposed workflows within the digitally enabled on-demand model.

3 Companies should ensure that the platform chosen is linked to the nature of the business and that **interoperability with other disparate systems** is considered. Otherwise, it will be difficult to configure the app solution to what the business demands.

4 **Customer loyalty could be affected** as they shift their interest to similar products and services with lower price points. This requires constant refresh of features and content to maintain customer stickiness

5 As this fast paced model develops and regulations attempt to catch up, companies should be **cognisant of any regulatory developments** that may impact the conduct of their on-demand model.

Indicative Metrics



Number of searches on website/app



Number and value of orders made in a period



Time taken to fulfil orders and accuracy of fulfilment



Customer feedback and complaint trends



Number of returns and associated costs

5.2.3 E-Commerce and Marketplace Models

One of the first and by far most successful companies to sell physical products via an online shop and e-commerce business model was Amazon. Today, it is also the best-known business model on the web and it is possible to buy almost everything on the internet today. On the other hand, in a marketplace model, sellers and buyers use a 3rd party platform to trade their goods and services. This marketplace can involve services (e.g. Uber, Upwork, etc.) or also products (e.g. eBay, Etsy, Amazon). Generally a marketplace is a two-sided platform, whilst e-commerce models are more one-sided.



Examples

Southeast Asia e-commerce Players

Read about the various e-commerce giants in southeast asia and different value proposition as e-commerce players



Source: *Southeast Asia growing market for e-commerce*

Mr. DIY's expansion into Online Marketplace

This article explains Mr. DIY's foray into building an online marketplace and what successes they achieved from this.



Source: *Mr. DIY online marketplace case study*

Considerations

The 'always-on' e-commerce models include a wide array of methods by which goods and services can be sold online and encompass B2B, B2C and C2C approaches. Additionally there are many variations to these models including direct to customer, subscriptions based, white and private labelling, e-retailers, dropshipping and B2C wholesale models¹¹⁷. On the other hand, being part of an established online marketplace provides a level of trust between seller and the buyer and impartial reviews of products and service may give new customers the confidence to buy. Companies should consider the following areas when embarking on e-commerce or marketplace models:

1

Understanding the customer segments, demand and customer preferences to be addressed and matching this to the companies core competencies and focus is a crucial first step in setting up an e-commerce model. This will also determine the type of e-commerce model variations or marketplace model that will be most suitable for sustainable outcomes.

2

While generally having a lower startup costs compared to brick and mortar businesses, the **upfront investment to set up an e-commerce model** (e.g. technology infrastructure, products curation, inventory and other resources) must be considered carefully as this investment may need to be funded until a decent level of scale and profitability is achieved. Similarly, a marketplace platform will also require a substantial initial capital outlay to ensure the platform is functional including localisation of language and currency amongst other areas and one that creates a great user experience.

3

The e-commerce model is highly competitive thus **reducing margins per transaction** and resulting in elevated customer acquisition costs (promotions, discounts and advertising) to achieve scale and profitability.

4

Participating as a seller on a marketplace may require payments of escalating "listing fees" and adherence to restrictive terms and conditions, including branding and promotional guidelines that need to be adhered to.

5

The **stability of the e-commerce or marketplace platform** must be considered as customers have many options and any disruptions to the buyer experience could cause a significant churn of customers to other platforms. Similarly customer complaints and queries need to be responded to in a timely and effective manner to keep customers from churning to other platforms.

6

The **supply chain needs to be set up and managed very well** as customers will normally get impatient with delivery delays and have the ability to influence other potential customers on their overall experience.

Indicative Metrics¹¹⁸



Sales conversion rate



Customer lifetime value



Shopping cart abandonment rate



Return customer rate



Net promoter score (NPS)



Customer acquisition cost (CAC)

5.2.4 Ecosystem Model

Digital ecosystems are one of the most complex but also the most powerful digital business models at the moment. Ecosystem orchestrators like Amazon, Alibaba, Google, Apple, Tesla, and many more are leveraging the customer with different services across different platforms. With the knowledge and the data, they can then upsell existing customers and attract new ones due to the “vendor lock-in” effects their ecosystems create.



Examples

Google's Ecosystem

Google's ecosystem spans across what we use at home, at work and in school, from hardware to services. Read more about how Google's business model works.



Source: *Google's Business Model*

Amazon's Vast Ecosystem

Amazon started as a online bookstore prior to venturing to e-commerce and over years extended to various businesses. Read about amazon's vast ecosystems in this article.



Source: *Amazon's Empire*

Considerations

Digital Ecosystems bring companies together across industries and technology areas by offering access to a common set of content, applications, analytics, datasets and other tools. The data they throw off collectively is also a potential gold mine for artificial intelligence (AI) applications and advanced analytics tools. An emerging capability of digital ecosystems is in sustainability, i.e. the ability to consolidate sustainable best practices, identify priority areas for action, and connect companies with the partners and technology providers¹¹⁹. Companies should note the following considerations within a digital ecosystem:

1

In order to get a sufficient amount of scale within the ecosystem, companies needs to **identify and clearly espouse the problem statement(s)** that the ecosystem is supporting from the outset

2

Interoperability between various stakeholders and platforms is key for a thriving ecosystem. Companies need to ensure that this interoperability is considered and risks and challenges are identified at the outset

3

Application Programming Interfaces (APIs) are key in a digital ecosystem and these APIs need to be defined, developed, maintained and exposed to ensure reliability, security and effectiveness

4

Various parties interoperate in an ecosystem model and it is therefore critical to **land on equitable commercial arrangements** that take into account sharing of risks and rewards across parties¹²⁰

5

The ecosystem model tends to show results or failures after scale or network effects kick in, i.e. after significant investments have been committed. Companies need to continuously **monitor early warning signs of failure** to mitigate these financial risks

6

As the digital ecosystem revolves around multiple parties and platforms, a **strong governance model needs to be established**, i.e. a balance between controls over access and conduct while ensuring thriving participation levels and openness to enable monetisation of the ecosystem¹²¹

Indicative Metrics



Number of users in the ecosystem



Sales or leads generated



Performance of the platform and interoperability



Revenue generated

5.2.5 Access-over-Ownership Model or Sharing Model

This is all about “sharing” but in a business way. This system allows you to pay for a product, service, or offering for a set amount of time without really owning it. This can be renting a car (e.g. Zipcar), renting an apartment (e.g. Airbnb), or even industrial machinery. This was one of the most disruptive business models due to the implications it had on ownership and the resulting revenues that can be generated. For example, a car could suddenly be an income stream instead of just generating costs.

Examples:



Examples

Sharing Economy in Malaysia

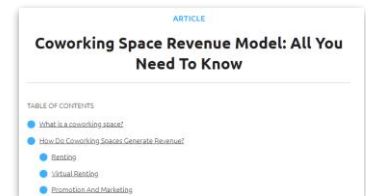
Read this article by Malaysia Digital Economy Corporation (MDEC) to understand the landscape of Sharing Economy in Malaysia.



Source: [Embracing The Sharing Economy](#)

Coworking Space

Read about how the sharing business model was implemented in the 'co-working space' business.



Source [Coworking Space Revenue Model: All You Need To Know](#)

Considerations

Digital Enablement (e.g. user friendly mobile or web applications, connectivity and location services and cashless payments) have led to a thriving community based sharing model where companies benefit from having a “rent-and-return’ cycle that is frictionless for the consumer¹²¹. This model also allows for sustainable use of resources and more efficient monetisation of products and services while providing flexibility to the consumer to enjoy products and services at their convenience. Companies should consider the following as they embark on a sharing model¹²³:

1

As seen in a few other digitally enabled models above, **regulatory uncertainties** may continue to impact this business model as regulations attempt to keep up with the fast changing digital world. This includes uncertainties on taxation especially in cross border transactions. Companies should ensure adequate scenario planning before embarking on a sharing model to be prepared for any regulatory restrictions that may come in force.

2

Fraud and data security must be managed very well to not only adhere to regulatory requirements but to also ensure customer confidence in the platform being used for the sharing model. This would require companies to invest in adequate infrastructure and analysis to curb any data breaches, for example.

3

The sharing model is a digitally enabled community based model that relies not only on the efficiency of the platform used or the services offered, but also on the trust and loyalty built across the community of consumers. Peer reviews and ratings play an important role in gaining consumer adoption and any **consumer discontent with defects, deficiencies or safety issues will be amplified through the community network** within and outside of the sharing platform. Companies need to have a strong response team and infrastructure to handle such issues expediently or risk losing huge numbers of consumers very quickly.

Indicative Metrics¹²⁴



Number of app installs and searches



Number of bookings



Number of cancellations



Asset (resources, products or services) utilisation rates



NPS, repeat customers rate and churn



Numbers and locations of defects or safety issues

5.2.6 Experience Model

This is about adding an experience to products that would not have been possible without digital technologies. One example is Tesla which brought a whole new digital experience to the automotive industry by adding digital services and even a digital ecosystem to their cars, which is now a major driver for their business model. Another take on the experience model is also to combine different experiences together and create a new customer centric ecosystem.



Examples

Apple and the User Experience Model

Apple's ability to optimise its own software to its hardware, and tightly integrate their services means Apple is in sole control of the overall user experience which differentiates them. Read more about this here.



Source: [Apple & the UX Biz Model](#)

Telehealth Industry

Significant changes are happening in the healthcare industry, and with the help of technology - it is now redefining the patient user experience journey which is driving the telehealth business. Read more about this here.

Telehealth: Technology meets health care

See how technology can improve your health care.

By [Mayo Clinic Staff](#)

How many times have you heard it said that the internet has changed modern life? Indeed, it's likely changed how you stay in touch with family and friends and buy goods and services. And it's probably even changed how you search for information about health problems.

Source: [Telehealth: Technology meets health care](#)

Considerations

As experience based models make the customer journey the focal point of the products or service being offered through Digital Enablement, companies benefit from higher touch points with consumers, higher attraction and stickiness, better adoption and conversion as well as increased up-selling, cross-selling and on-selling opportunities¹²⁵. Companies should consider the following to harness the benefits from digital experience business models:

1

A digital experience provides an opportunity for businesses to meet the ever-increasing demands of the modern consumer in a way that adds value to the overall experience they have in their interactions with a company's products and services offerings. To meet this demand, companies require a **good understanding of changing customer behaviour** and how Digital Enablement is constantly shaping and reshaping this behaviour.

2

The digital experience that wraps around the products or services needs to **take into account the human factor** thus providing minimum effort to get to a result and with easy transition from one touchpoint to another where required.

3

Leveraging off user data is crucial to generate a digital experience that is unique, however the transparent use and security of customer data needs to be carefully considered when building digital experiences.

4

In order to create unique customer journeys from Digital Enablement, companies may want to **consider using Digital Experience Platforms (DXP)** which are integrated sets of core technologies that manage digital experiences across a broad range of customer touchpoints and supports the composition, management, delivery and optimisation of contextualised digital experiences¹²⁶.

Indicative Metrics¹²⁷



Customer Effort Score (CES)



Customer Retention and Churn Rate



Customer Satisfaction (CSAT)



First Contact Resolution & Average Resolution Time (ART)



Net Promoter Score (NPS)



Customer Referral Rate

5.2.7 Other Models to Consider



Subscription Model

Netflix or Office 365 are good examples of the classical subscription model where the user gets access, updates, services, etc. on a monthly/annual basis. The subscription model is especially used for content, software, and memberships.

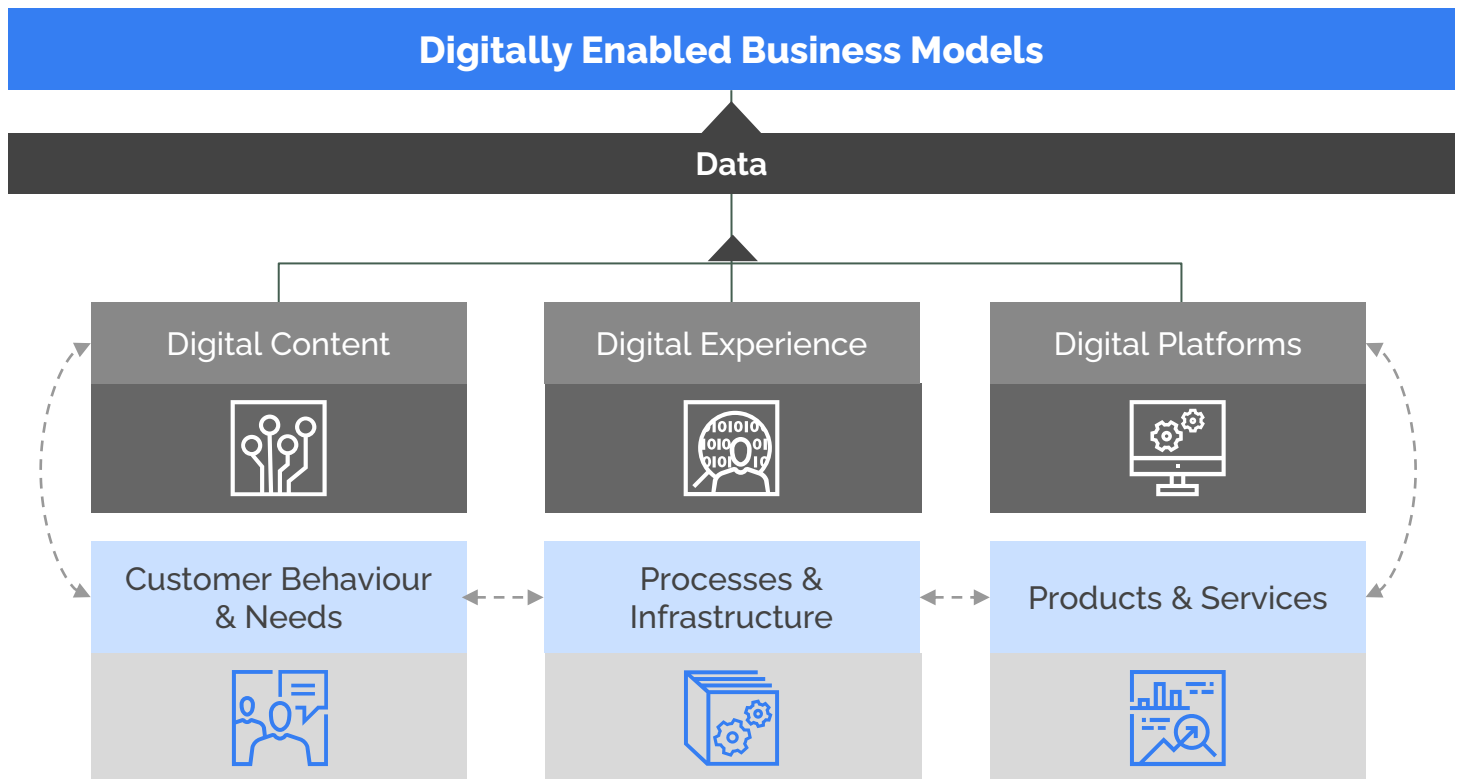


Open-Source Model

Firefox is one of the most successful open-source examples. The software is free to download, free to use, and open for the community worldwide to contribute. Because it's free and a lot of people contribute, it spreads fast and usually also gets a lot of (free) resources to improve the software. The business model behind Firefox is generating royalties and partnerships from search engines. Red Hat gives out the Linux-Distribution for free and later then earns money from training, services, and hosting of the software.

5.3 The building blocks for Digitally Enabled Business Models

A synthesis of the various models depicted in the sections above show that there are a few common attributes that interplay with each other, either through convergence or combination, to create unique digitally enabled value propositions as depicted in the diagram below:



By doing a deep dive into these attributes, companies can determine which combination or convergence of these attributes would enable the creation of a digitally enabled business model that would be most suitable to create differentiated propositions for customers and sustainable value for the business.

5.4 Call to Action & Useful Links



Call To Action



In this increasingly saturated, competitive and commoditised business landscape, companies should use Digital Enablement to create differentiated business models to generate new revenue streams and capture new segments of customers



New digitally enabled business models will require (significant) investments and resources upfront with an uncertain payback- companies must put in place proper governance constructs to oversee the roll out of these models and monitor performance closely using established leading and lagging metrics



Companies must identify potential hidden costs when creating new digital models for their business - many of these are untried models and regulations are trying to keep up



Interoperability across platforms is the hallmark of many of the successful digital business models - towards this end, companies need to watch the balance between 'openness' and security needs while leveraging off appropriate APIs



Before embarking on a new digitally enabled business model, companies should be clear on what they are setting out to achieve, have adequate resources and funding to fuel the launch and scale-up phase and have bold leadership to course-correct when required



Useful Links

- ✓ [9 disruptive business models explained](#): Provides explanation of different business models and their examples.
- ✓ [6 Types of Ecommerce Businesses and Their Pros & Cons](#): Illustrates different kinds of e-commerce business models and their characteristics.
- ✓ [The Power Of Digital Ecosystems Is Greater Than Their Parts](#): Explanation of how partnerships among companies drive success in digital ecosystems models.
- ✓ [10 Best Customer Experience Metrics](#): Examples of customer experience metrics to be considered when implementing a business model.
- ✓ [Business Model Canvas](#): A visual tool to conceptualise and iterate key aspects of your business model.

6

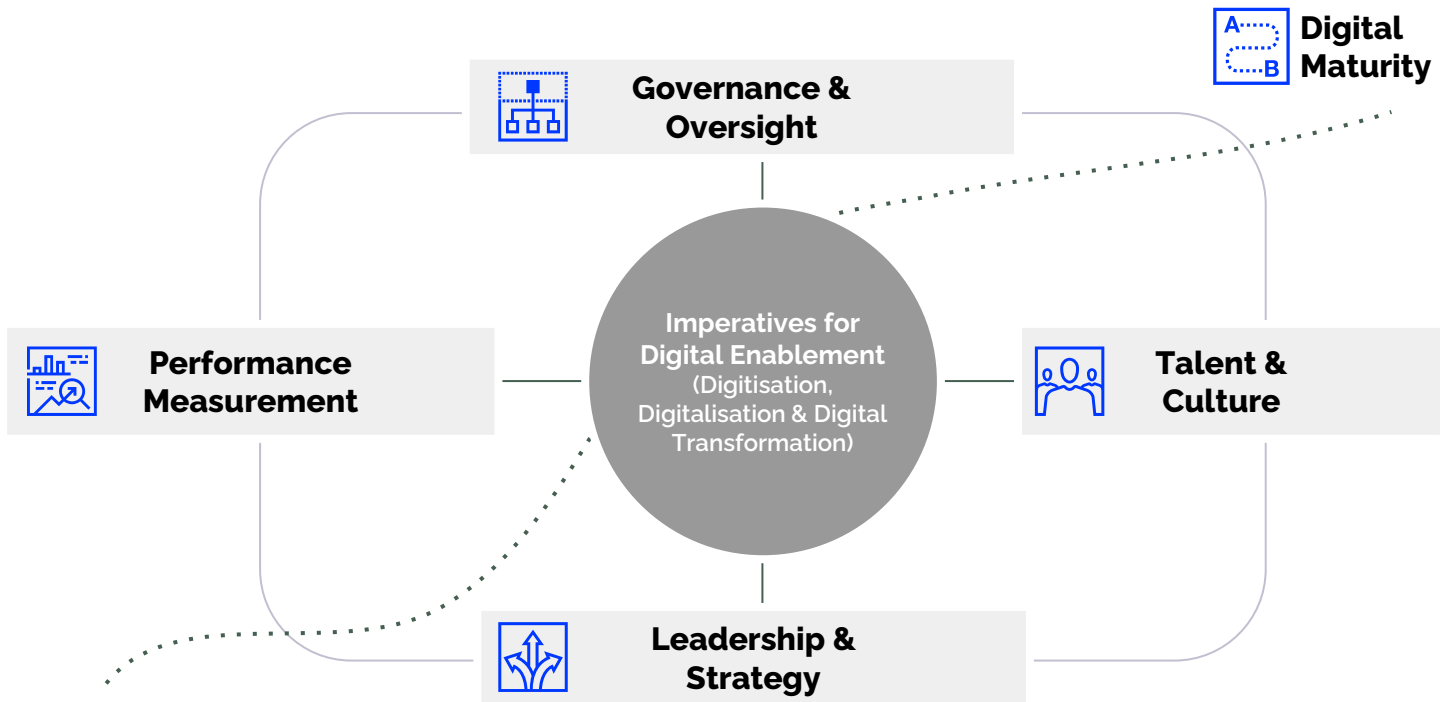
Implementation Considerations for Digital Enablement



6.1 Imperatives for Effective Digital Enablement

The previous chapters elaborated on the benefits to be gained from harnessing Digital Enablement. More importantly, the narratives, examples and considerations provide a burning platform for companies to embrace Digital Enablement, wherever relevant, to elevate performance and achieve sustainable outcomes.

While there have been, and continues to be many revolutionary technological developments that have driven digital adoption in companies, effective Digital Enablement goes beyond technology and needs to be nurtured throughout the company as they evolve and adapt to new ways of doing business. The sections below outline imperatives for effective Digital Enablement based on the following critical areas¹²⁸:



Spotlight PETRONAS

Imperatives for Successful Digital Transformation



PETRONAS has long been undergoing a group wide digital transformation journey. The company has also been recognised for some of its digital transformation initiatives such as the Setel App, AI-driven live advisory for LNG plant start-up and i-PIMS, an integrated pipeline integrity assurance solution. In this [video](#) interview with **Aadrin Azly, Chief Digital Officer of PETRONAS**, he shares his views on the imperatives for a successful Digital Enablement journey including:

- The essential levers in digital enablement:
 - Putting in place enterprise building blocks is critical - data, connectivity, cybersecurity, cloud infrastructure
 - Working with the businesses to identify pain points and how digital solutions can alleviate those pain points
 - Creating a digital culture - upskilling and reskilling the workforce
- Digital enablement is a costly exercise, as such it is important to identify what pain points an organisation is trying to solve. By doing so, stakeholders or businesses are then able to recognise the tangible value and benefits that digital creates
- Obtaining buy-in from various stakeholders, including the Board and Senior Leadership is key. By involving the stakeholders along the digital enablement journey allows them to understand the value it creates for the overall organisation

"By learning and growing together, the Board and Top Management feel that they are also part of this (digital enablement) journey rather than just a group of people trying to push this agenda forward. It then becomes a corporate agenda within the organisation"

"It is important to prioritise use cases and whilst we want to select big use cases, it also needs to show fast results. With those fast results, you want to celebrate as you want to ensure the organisation sees those tangible results. Through those results, people will become more confident." - Aadrin Azly







The CDO's role as a business leader entails:

- Understanding the business or customers' goals and priorities
- Being able to orchestrate between the various stakeholders and businesses within the organisation
- Being able to advocate and convince stakeholders on the digital enablement initiatives

6.2 Digital Maturity

The goal of Digital Enablement is to raise a company's digital maturity to levels where it is getting optimal benefits from digitisation, digitalisation and digital transformation. Digital maturity refers to an organisation's ability to respond and adapt to disruptive technological trends and is more of a process than an end goal, i.e. a continuous undertaking throughout an organisation's life cycle as technology constantly evolves and companies adapt to these changes to remain competitive^{129,130,131}. Digital maturity assessments provides an appreciation of the overall readiness and maturity of a company's business ecosystem to adapt and adopt Digital Enablement in day-to-day operations across a broad set of attributes as shown below:

Key attributes

	Business strategy		Customers & partners
	People & culture		Operations & processes
	Technology		Other areas that may be specific to operations & nature of business

Companies embarking on Digital Enablement, or companies which have embraced and adopted Digital Enablement are encouraged to continuously measure their digital maturity to ensure their readiness and propensity to adapt and adopt to changing digital trends. While there are comprehensive assessments that can be commissioned through independent specialists in the field, companies may want to start by conducting simple self assessments using the many resources available online.

Digital Maturity Self-Assessment Resources

- [Digital Maturity Assessment \(by Digital Leadership Ltd, UK\)](#)
- [Digital Competency Rating \(by EFAA\)](#)
- [What's your Digital Maturity? \(by Axway\)](#)
- [Data, Analytics & AI Readiness Assessment \(by MDEC & IDC\)](#)

6.3 Governance & Oversight

Digital governance is a framework for establishing accountability, roles, and decision-making authority for an organisation's digital presence. This includes but is not limited to its websites, mobile sites, social channels, and any other Internet and web-enabled products and services as well as the underlying enablers for its digital presence such as data, technology platforms and connectivity infrastructure¹³². The components of a digital governance framework encompass those areas which are commonly found in enterprise governance frameworks (See *PLCT Guidebook 1 on Enterprise Governance*) with a focus on Digital Enablement such as:

- Digital Strategy
- Digital Policies, Standards and Guidelines
- Digital Processes
- Digital Teams and Accountability

The following diagram outlines the key areas that companies need to keep in mind as they set up strong governance and oversight for their Digital Enablement journey.

Key areas for a strong governance oversight

1 Tone & Conduct from the Top

- The Board and management need to 'walk the talk' where Digital Enablement is concerned. There must be clear digital transformation strategies in place which are well communicated to stakeholders.
- The Board needs to advocate the benefits of Digital Enablement and be well educated on the digital imperatives for the company
- Management needs to demonstrate the benefits from Digital Enablement and the 'what's-in-it-for-me' use cases to stakeholders.

2 Digital Success Relies on People & Trust

- While technology has driven the advent of Digital Enablement across company value chains, the success and sustainability of digital adoption will only be assured when people (i.e. both the company's customers and its workforce) are clearly convinced, incentivised and encouraged to adopt - (1) new digital products and services in the case of customers, and (2) new ways of working in the case of the workforce.
- People must trust and see that Digital Enablement will benefit them.

3 A Focus on Cybersecurity, IT & Data Governance is Paramount

- There have been many incidents where integrity and security of technology and data have been compromised with devastating impact to the business and people¹³³. Companies need to establish robust mechanisms to address cybersecurity, IT and data threats that accompany Digital Enablement efforts including the following:
- Incentivise desired behaviours relating to digital governance across the company's workforce and drive a culture of compliance, risk awareness and ethics to ensure the safeguarding of Digital Enablement efforts
 - Establish a comprehensive IT governance framework adhering to best practice standards, to ensure that the organisation's IT investments support the business objectives, manage the risks and meet compliance regulations
 - Put in place robust data governance policies and procedures that dictate processes and accountabilities for the collection, storage, processing, sharing, distribution and purging of data adhering to regulations and best practices
 - Invest in appropriate cybersecurity technology and processes to ensure systems are well protected from cyber threats

6.4 Talent & Culture

An essential component of Digital Enablement is Digital Transformation, which refers to the cultural, organisational and operational change of a company, industry or ecosystem through smart integration of digital technologies, processes and competencies across all levels and functions in a staged and strategic way¹³⁴. Therefore, while technology drives digitisation and digitalisation efforts, the overall digital transformation requires people intervention at all levels of the company. The following areas are key considerations from a talent and cultural perspective for sustainable Digital Enablement in companies:

1 Digital Competencies

As a company delves deeper into Digital Enablement across its operations, the need to have a digitally skilled workforce increases exponentially. This calls for the following interventions to ensure that the workforce is relevant and able to adapt to, and adopt new ways of working¹³⁵:



Upskilling - The workforce needs to be upskilled to be in a good position to adopt new Digital Enablement. This will require significant investment in training to equip teams with the necessary business and technical knowledge to use new digital assets in the most effective way



Reskilling - Employees with 'adjacent skills' may require reskilling to re-train them in new ways of working for traditional roles. This reskilling exercises will enable existing employees to effectively move laterally into roles and work processes that have changed



New Talent - In many instances, there will be a need for companies to augment their workforce with new digitally experienced talent who have the competencies to understand, operate and monitor digital processes and technologies. Companies will need to be in a good position to attract and retain these much sought after talent



Unique Career Pathing - Companies will need to consider new career pathing approaches for its digital talent, who may not be comfortable with the normal 'rank and file' approach. This will require a revamp of traditional career models within many companies with the introduction of innovative career options and growth opportunities



Managing redundancy - An unfortunate outcome from Digital Enablement is potential job redundancy caused by automation and other changes in processes and roles, even after attempts at upskilling and reskilling. Companies will need to be prepared to manage these sort of competency related redundancies to ensure the well-being of employees is taken care off.

2 Performance Management

Performance Management ensures that accountability for digital change and associated outcomes are clear. All levels of the organisation have a role to play in ensuring digital change happens as planned and this requires appropriate behaviours to be moulded to ultimately form a conducive culture for adopting digital change. Companies should consider the following:



- Definition of the desired outcomes and behaviours need to be determined granularly upfront, i.e. before embarking on the change efforts. This will enable the definition of performance measures that will drive these desired behaviours



- Key Performance Indicators must include business outcomes (e.g cost savings, productivity uplift, customer satisfaction scores) arising from the Digital Enablement and **should not** be limited to implementation measures (e.g. timely deployment of new technology, costs of implementation)



- Monitoring performance and behaviour change must be embedded as part of the performance management process to facilitate interventions where required to achieve desired outcomes

3 Change Management

Companies will need to ensure robust change management initiatives are in place so that digital transformation efforts are sustainable and achieve the desired returns on investment (ROI). These would include¹³⁶:



- Demonstrating appropriate conduct from top management as change which starts at the top reflects a committed, invested, unified leadership that's on the same page about the future of the company



- The degree of Digital Enablement introduced at any one time needs to be carefully managed and should focus on necessary enablement with demonstrable outcomes while minimising overall business disruption



- Companies need to identify and mobilise digital advocates (the term 'digital accelerators' is used by some companies) who not only embrace digital ways of working but those who influence others on the benefits of this change



- Hand holding employees throughout the digital change journey will go a long way in accelerating adoption and minimising fear and resistance. This will include experiential training, impactful communications, on the job support, coaching and counselling as required

6.5 Leadership & Strategy

Successful adoption of Digital Enablement requires strong leadership, not just from the Board and top management, but across various functions, grades and levels. Additionally, for leaders to ensure company-wide adoption, they must holistically plan, deploy, and sustain their transformation strategy as success relies on leadership's confidence in their deployment strategy¹³⁷. The following areas are essential leadership attributes to ensure effective digital adoption in a company:

LEADERSHIP ATTRIBUTES REQUIRED TO DRIVE DIGITAL ADOPTION

- 1 Envisioning a compelling end-state and setting the 'direction of travel', i.e. an inspiring and achievable transformation strategy and roadmap that significantly enhances the company's performance and outlook.
- 2 Ensuring all required resources (e.g. people, budgets, time commitment) for the transformation is available at the outset and appropriately deployed throughout the transformation.
- 3 Making fast data driven decisions to steer the transformation journey, resolve issues, mitigate risks and evaluate best options to take.
- 4 Sparking the desired behaviour and cultural change and walking the talk, reinforcing an inspirational transformation narrative and demonstrating the transformation value to various stakeholders at all levels of the company.
- 5 Ensuring mechanisms are in place for proper governance, monitoring and reporting of transformation progress and benefits realised.
- 6 Demonstrating accountability for outcomes with a bold resolve to course correct where and when required.

The Digital age has given rise to unique leadership roles and responsibilities with the intent of driving and accelerating digital transformation and benefits realisation. One role which is gaining momentum in many leading companies is that of the Chief Digital Officer (CDO). The following spotlight provides further insights on how a CDO role could catalyse digital adoption:

Spotlight Perspectives on the Role of CDOs

Understanding the Role of a Chief Digital Officer



CDOs play a vital role in driving digital transformation in many organisations today. **Vishy Narayanan, Asia Pacific Chief Digital & Information Officer for PwC** explains why this role is becoming more important for companies undergoing digital transformation. In this interview, he elaborates on the following perspectives:

“A CDO needs sponsorship and support to be bold and innovative and there must be recognition that there will be the occasional failure - because these are areas of change that haven’t been tried before.” - Vishy Narayanan

- The CDO is someone who takes a holistic approach when it comes to digital transformation, and not just a technology view. The CDO has to be connected to all parts of the organisation and the business—from its customers to its people and the enabling technology to drive successful transformation
- The CDO also acts as a “coach” to support the organisation navigate through the various challenges of its digital transformation to meet its objectives.
- The CDO helps organisation steer between its short term and long terms goals - it is important to demonstrate short term wins to keep the organisation and people engaged and motivated and strive for long term outcomes that ultimately drives sustainable value for the company.

For more resources, read this article on [What is a Chief Digital Officer](#)

6.6 Performance Measurement

As Digital Enablement requires significant investment in human resources, money and time, measuring the outcomes and benefits is even more critical (see PLCT Guidebook 1 on Performance Measurement). Having the appropriate KPIs and metrics will provide visibility on performance and even early warning alerts on the state of the company's digital journey. Due to the dynamic nature of digital adoption and associated technologies, KPIs will also need to evolve and certain traditional measures will not be sufficient to provide the required insights on the performance. The following provides a list of indicative KPIs that are relevant to measure Digital Enablement efforts and should be considered to supplement more traditional measures. These KPIs are not exhaustive and companies will need to develop measures that are specific to their needs and digital maturity¹³⁸:



Return on Digital Investments

Incremental earnings derived as a result of overall Digital Enablement



Employee Productivity

Hours saved and increase in output per unit of input due to automation and robotics



Digital Adoption

Degree of engagement with and utilisation of specific digital technology



Customer Experience

The increase in Net Promoter Scores, retention, sell-ons & stickiness



AI Enablement

Proportion of work processes that are utilising Artificial Intelligence



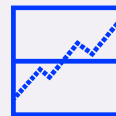
Reliability & Availability

The level of uptime & speed to resolve disruptions through digital presence



Competencies & Upskilling

Degree of upskilling across the company and level of digital literacy



Revenue from Digital Technology

The returns attributed to specific new technologies being introduced



Cloud Adoption

The degree of cloud migration and efficiencies from cloud adoption



Cybersecurity Metrics

Effectiveness of cybersecurity measures and tools to mitigate cyber threats and breaches



Talent Management¹³⁹

The ability to attract and retain top technical talent



Cost of Digital Initiatives¹⁴⁰

Proportion of annual technology budget spent on bold digital initiatives

6.7 Accelerating Digital Enablement

The evolution of technology solutions and delivery mechanisms provide companies with opportunities to accelerate certain aspects of Digital Enablement without significant upfront capital outlay and with lower risks. Companies embarking on Digital Enablement initiatives should consider the following approaches to fast-track their efforts:

Fast-Tracking Digital Enablement

Software As A Service (SaaS)/Software With A Service (SwaS)^{141,142}

- SaaS: is a software licensing and delivery model in which software is licensed on a subscription basis and centrally hosted. As such, there is no upfront development cost required for companies choosing this approach and companies can implement a SaaS model expediently. However, it is critical that companies are clear on their business requirements as SaaS typically does not accommodate high levels of customisation
- SwaS: similarly offers software licensing with the addition of having expert services that are readily available for companies to obtain continued guidance on the software usage, maintenance and adoption.

Alliances and Partner Ecosystems^{143,144}

- The pace and complexities of implementing digital enablement in companies are some of the reasons why companies are forming strategic alliances and partner ecosystems. These partnerships can be formed either for development, technology or implementation. The benefits for companies forging partnerships include:
 - Shorter time-to-market, reduction in unnecessary costs and higher project efficiency
 - Expanded product delivery channels
 - Flexible and customisable applications
 - Smooth process from planning and designing, to deploying and maintaining the solution
 - Higher project success rate

Outsourcing / Co-sourcing^{145,146}

- Companies today are outsourcing or co-sourcing to capitalise on more sophisticated offerings. These services include customised industry solutions and advanced digital technologies such as AI and analytics. The benefits companies potentially gain include:
 - Access to skilled resources without the need to source for these scarce resources in-house
 - Mitigation of risks as outsourced parties understand the challenges and can overcome them proactively
 - Cost effectiveness and higher security

Managed Services¹⁴⁷

- A managed service provider offers a holistic and comprehensive range of digital services within one or many technology domains
- Large teams of skilled technology and process professionals create a superior end-user experience by providing platforms, operational support and enhancements for a wide range of digital applications and services

6.8 Common Pitfalls to Avoid in Digital Implementation

As companies embark on broadening their digital footprint within the organisation and across the business landscape, there is a real risk that many such initiatives will fail, leading not only to financial loss, but also lost opportunities due the highly competitive environment. The following checklist provides a non exhaustive list of key areas that companies should consider to minimise the risk of failed digital efforts¹⁴⁸:

COMMON PITFALLS TO AVOID IN DIGITAL IMPLEMENTATION

Do not adopt technology for the sake of technology

Ascertain whether digital adoption can and will provide specific business benefits in the critical areas of customer experience, empowering people, operational efficiencies or creating new revenue streams

Digital transformation is NOT a one-off effort

As technology evolves and business needs change, Digital Enablement will also need to be refreshed. This means a continuous cycle of improvements, upgrading and new adoption.

It's not just about the IT Department

Digital transformation affects the whole organisation and while the underlying technology and digital platform provisioning and maintenance might be the responsibility of the company's IT function, the adoption, i.e. usage and benefits of realisation of digital tools, resides with various functions.

Do not ignore emerging trends and tech

Digital Enablement can become obsolete very quickly with the emergence of new technologies and ways of working, including new business models. In many instances, the adoption of emerging trends and tools could happen at lightning speed so companies need to have the means to consistently scan the environment for these imminent developments

It's not just about collecting as much data as possible

Digital provides an avenue to collect huge amounts of data from various points of business operations and the overall business landscape. Sometimes these vast amounts of data can become overwhelming and remain unused. Companies should therefore strengthen their data analytics capabilities to drive better performance.

#digitalisaboutpeople

As the hashtag shows, the common pitfall in digital transformation efforts is the fact that the people angle is not given adequate focus. Successful transformation requires robust change management, progressive performance management frameworks, alternative resourcing models and a focus on employee empowerment and well-being

7

Conclusion



7.2 Conclusion

#digitalisaboutbusiness



This guidebook has provided pertinent areas to be considered by PLCs in their efforts to harness the benefits from Digital Enablement. The principles, examples, case studies and calls to actions, as well as the various links and enabling practice aids in this guidebook have been provided with the intent of accelerating digital transformation efforts by PLCs.

It is clear that adopting Digital Enablement has become table stakes for companies to survive in this digital age. Additionally, the investability or attractiveness of companies to investors increases significantly when Digital Enablement can be clearly demonstrated as being part of the company's DNA.

It is also tempting to drive Digital Enablement through a technology lens given the rapid development of applications, platforms and exciting emerging tech. However, sustainable digital transformation only happens when companies take a business benefits perspective. Toward this end, the recommended four dimensions of Digital Enablement will be a good guide for companies to use as they embark on their digital journey.

The question that should be asked upfront is '*why are we going digital?*'...and companies should then assess the potential outcomes against the following dimensions:

- to enhance customer experience
- to empower our people
- to harness operational efficiencies
- to create new business models

...or a combination of the above.

#digitalisaboutpeople



To ensure sustainability of digital transformation efforts, a people-centric view must be adopted at all times. Digital Enablement will require bold and visionary leadership and clear conduct from the top to inspire people to adapt to, and adopt new ways of working. Additionally, as Digital Enablement becomes table stakes, the differentiation will come from the 'human touch' which companies will need to integrate into their highly digital ecosystem.

Upskilling and change management become key and unique performance management frameworks and career pathing need to be established to drive the desired behaviours and career growth in a digitally enabled environment. The dreaded question of *what do we do with potential redundancies* must be boldly addressed upfront.

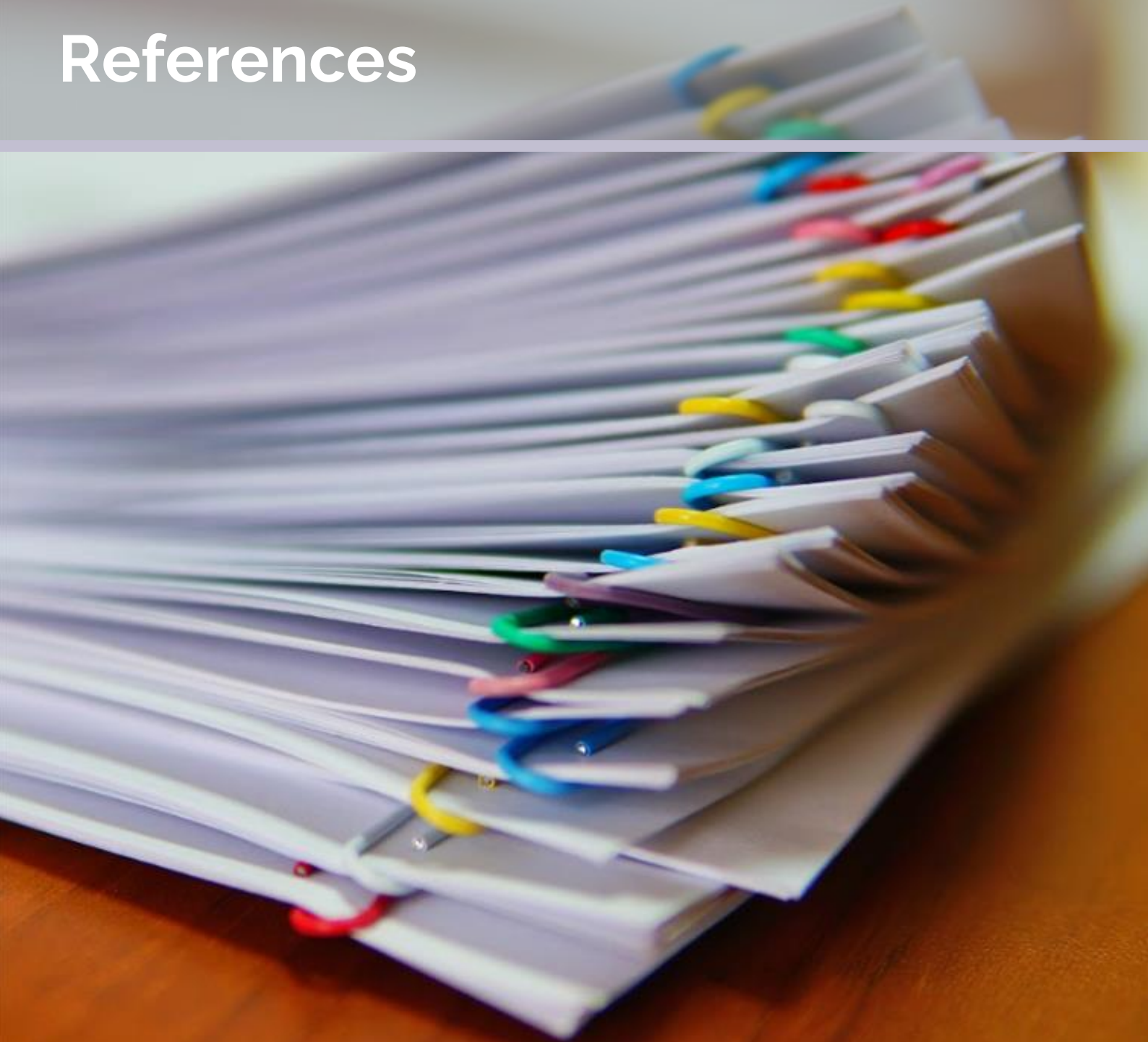
#digitalisabouttechnology



The impact of technology must not be downplayed in digital transformation efforts. Choosing the right application, platform or infrastructure is a complex undertaking that requires leadership, expertise, foresight and funding. Leaders will often be faced with make-or-buy decisions, i.e. 'do we buy applications off the shelf or do we attempt to develop and customise to our business needs?' Whatever decision is made, the three aspects of scale, modularity and seamless integration (or interoperability) with other systems must be considered.

Finally, Digital Enablement should not be seen as a one-off effort. Companies will need to keep abreast of changes in technology and business landscape and be ready to course-correct where required.

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