



**Advancing the ASEAN Economic Community**  
The Digital Economy and the Free Flow of Data

# Executive Summary

## Digital will help integration

The ASEAN Economic Community (AEC) is the biggest single economic policy initiative in Southeast Asia. With the 2015 deadline now past, the member states have agreed on a blueprint to complete the programme by 2025. Much of the plan is on point, but, if there is a flaw, it is that the digital economy, while acknowledged to be important, remains at the periphery of the AEC framework. Doing so leaves potential unfulfilled. The digital economy should be embraced as central to the AEC to make integration bigger, better and happen sooner.

## Big upside to positive action

The digital economy will contribute to growth and integration in Southeast Asia in five ways:

- #1 With the right policy framework, more of the 636 million people in Southeast Asia will become connected and ever larger numbers will transact online. They will do so because they will have more choice and get better value than from traditional channels.
- #2 Digital will make manufacturing in Southeast Asia more competitive. Disruptive new technologies will allow supply chains to be more networked and more distributed, while allowing logistics and transaction costs to fall.
- #3 Rising consumer demand, changing manufacturing supply chains and digital finance will open up big new opportunities for the legions of small and medium sized enterprises (whether of the traditional or of the high tech variety) that make up much of the corporate landscape in Southeast Asia.
- #4 Digital will drive innovation, development and growth in finance. The benefits spread across all stakeholders, but are especially

focused on the underbanked, the unbanked and SMEs. In Southeast Asia, the basic building blocks of overall market size, mobile penetration and willingness to adopt new technologies is now in place. With supportive policies and regulation, the time is now for finance in Southeast Asia to go digital.

- #5 The digital economy will also drive more investment to Southeast Asia. Already a profitable place to invest, the combination of integration and digital will expand the universe of investment opportunities in Southeast Asia. Sustained investment will fuel and enhance Southeast Asia's position as one of the fastest growing regions of the world.

## Free flow of data is a necessity

Businesses increasingly rely on the ease of the digital transmission of data. Indeed, data is the lifeblood of the digital economy. Southeast Asia must allow data to flow freely across borders for the digital economy to thrive.

At a transactional level, data underpins the flow of goods and services within countries around the region and between Southeast Asia and its major trading partners. The free flow of data will make those flows easier, faster and cheaper.

More than that though, the free flow of data is a necessary condition for the adoption of emerging cloud technologies. The cloud will drive positive change many Southeast Asian businesses ~ driving productivity while reducing up-front capital costs, reducing fixed costs, aligning technology costs with usage and reducing the risks associated with big bets on technology investment decisions in next generation areas like the Internet of Things and Big Data Analytics.

## The time is now

The world has changed dramatically since the AEC was conceptualised. It will only transform and advance more through technology, global value chains, innovative business practices and the widespread use of the Internet. As regional integration enters a new phase, the time is now to create the conditions to get the best outcome for Southeast Asia on the digital economy.

The need is six-fold:

1. Identify the digital economy as a core priority for the AEC programme.
2. Commit to a new initiative to make ASEAN digital-ready across every sector.
3. Establish committees in member states to identify laws and regulations to change to be digital-ready.
4. Acknowledging data as a horizontal (not a vertical) issue, involve all key sectors and stakeholders in the process.
5. Make adoption of a cross border framework to allow data to flow a near term priority.
6. Support adoption of cloud computing so that consumers and businesses have access to services and solutions with the best available security and privacy protections with economies of scale.

This document lays out the case for positive action and suggests ways by which the AEC framework can bring the digital economy to the centre of the integration plan.

ASEAN has a young population, fast growth and an emerging middle class. Digital trade and finance should be at the centre of the ASEAN Economic Community in the next decade.

There are regional success stories that harness the power of digital trade and finance. With the right policy framework, there can be many, many more in the years to come. For that to happen, the digital economy must be brought to the centre of the AEC framework.

All business in Southeast Asia is affected; this isn't just an issue for technologists. The digital economy (and the free-flowing data that it needs) will make the AEC more vibrant, bigger and more inclusive.

# Introduction

The AEC is the most significant single economic policy initiative in Southeast Asia at present. It is the embodiment of the realisation that by acting together, Southeast Asia is big enough to matter.

It aims to put ASEAN on a path of higher and more sustainable growth path by creating a single market and production base that is ever more competitive and ever more integrated into the global economy.

The digital economy can be a powerful enabler of the transition to the more dynamic, networked and innovative region that the AEC is intended to create.

It can do so by:

1. Delivering on the potential of digital commerce (whether electronic, mobile or social). As a region, ASEAN is home to 636 million people ~ the 3rd largest population in the world. It has favourable demographics and a sizeable, emerging middle class. More than that, its citizens are dynamic, tech-savvy and early adopters of technology ~ Southeast Asia is #3 globally in numbers of mobile subscribers and #4 as Internet users.

And yet, digital commerce is a small part of the ASEAN marketplace and a fraction of what it will become. It currently generates approximately US\$150 billion in revenues. It is expected to become one of the world's top-five digital economies by 2025.<sup>2</sup>

2. Facilitating the development of ever-more connected and networked value and supply chains. The diversity that is at the core of ASEAN can become a core strength if digitization makes it ever-faster, easier and cheaper to trade both within the region and with its trading partners.
3. Realising the potential of the regions' legion of small and medium sized enterprises. Digital trade in products and in services can bring as-yet unconnected SMEs into the regional marketplace, both for cross-border retail consumption and as a growing part of the value and supply chains of larger businesses.
4. Driving innovation, development and growth in finance. The benefits will be widespread, but will disproportionately help the underbanked, the unbanked and SMEs.

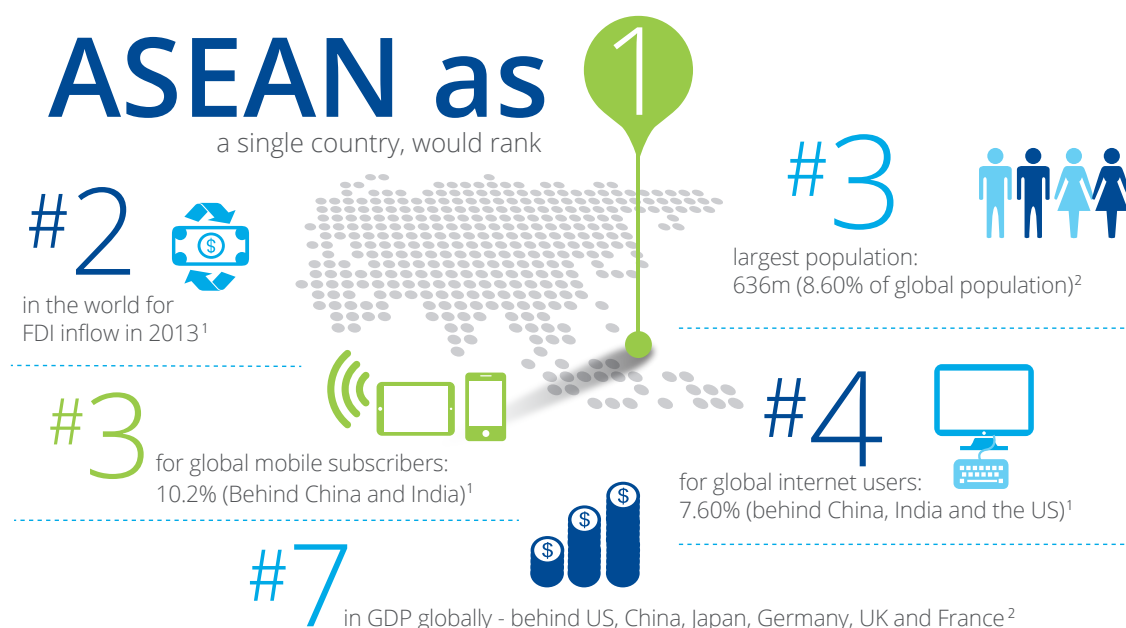
5. Making Southeast Asia an even more attractive investment destination. Last year, ASEAN attracted US\$137 billion of foreign direct investment. It is the world's 2<sup>nd</sup> largest destination, behind China.<sup>11</sup>

As the AEC enters a new phase, the member states of ASEAN must act to realise the benefits of the digital economy for an integrated region.

This requires a new initiative that is specific to the digital economy and one which acknowledges that the free flow of data is a crucial component.

This initiative must recognise that data as an enabling horizontal, and not as a vertical, issue. It affects all businesses across all sectors and so must also have a plan and a timeline all of its own.

This document is a contribution for the consideration of policy makers in member states, who create the frameworks for business to operate within, and for business leaders, whose organisations work within those frameworks to make the AEC vision a reality. We hope it will also be of interest to a wider group of stakeholders within civil society, as an important topic for the development of this vibrant region at this exciting time.



# State of play

## AEC Framework

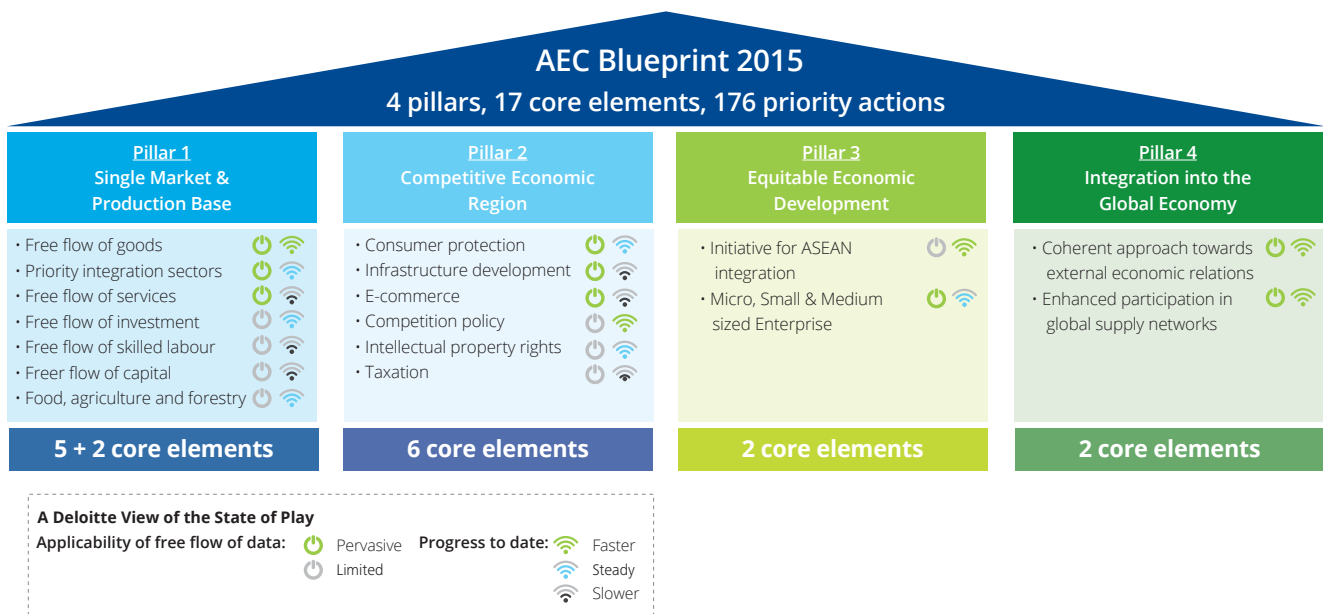
ASEAN is a region that seeks to be networked, competitive, innovative, highly integrated and contestable.

In the digital age, the free flow of data is a critical enabling component for success in many of the elements of the AEC's four pillars. And yet, it is striking that there is no single initiative ~ in place, in development or in planning ~ that directly addresses this requirement.

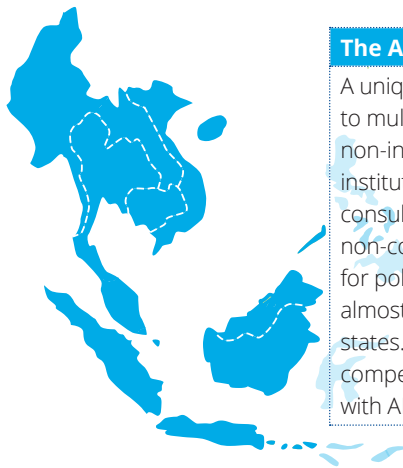
That gap doesn't mean that ASEAN hasn't made progress. Much has been done to make the AEC a reality and certainly much more than most realise.

We reviewed both the AEC framework and the progress made in implementation in our briefing document "The ABC of the AEC".

As a refresher of the essential elements, the framework and the progress to date are summarised below:



## How it works



### The ASEAN Way

A unique approach to multilateralism ~ non-interference, minimal institutionalisation, consultation, consensus and non-confrontation. Responsibility for policy action on the AEC rests almost exclusively with member states. No mechanism exists to compel member states to comply with AEC commitments.

+

### ASEAN-X

A mechanism whereby a sub-group of members can act on policy without waiting for all to do so. Those that can't or don't want to proceed follow later, but set their own timeframes to act.

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### The Result

The AEC is a collaborative and consensual programme.

It co-ordinates and aligns national policy initiatives, whilst linking and rationalising existing agreements.

## Progress to date

Looking at each of the pillars of the AEC framework in turn, the areas of progress (or not) are as follows:

### Pillar I

The **Free Flow of Goods** has seen good progress. Tariffs have been substantially eliminated on ASEAN-originating goods and progress has been made on trade facilitation. A push is underway to address non-tariff measures by 2018. Seven of the ten member states have implemented National Single Windows and are participants in the ASEAN Single Window pilot project, while the remaining three members are establishing the platforms for their windows. This pilot standardises customs reporting and facilitates the exchange of data between customs and those trading. When fully implemented, it will be easier, faster and cheaper to trade with and within ASEAN.

Progress in the **Free Flow of Services** in general and in the **Priority Sectors** in particular has been slower and less even. That is a disappointment, given the importance of services to growth in employment and output. Trade in services within ASEAN is a largely untapped economic force ~ there are tremendous unrealized benefits if services trade liberalization was broader and deeper. The digital economy will be a critical area where these benefits can be realised.

**Free Flow of Capital** was always seen as challenging in the near term and that has proven to be the case. The new focus is on financial inclusion as an objective and on payment and settlement systems first. Data must flow freely for payment and settlement systems to deliver wider coverage, better service at lower costs. With the free flow of data, payment and settlement systems can support the digital economy and so aid financial inclusion.

It is...  
...uniquely  
ASEAN

It is not...  
...the EU

It is...  
...open, outward  
looking, inclusive

It is not...  
the creation of  
"Fortress  
ASEAN"

It is...  
...using diversity  
as a strength

It is not...  
...making SEA  
uniform

### Pillar II

Progress has been mixed. In three core elements (**Competition Policy**, **Consumer Protection** and **Intellectual Property Rights**), frameworks are in place and coordination in implementation has begun.

Concerted action has been called for, but not always delivered, in two other core elements:

#### Infrastructure Development

An area where achievement has lagged needs. Universal, affordable Internet access must be a priority. Fixed broadband deployment is only 15% and net connection speeds lag global averages (only Singapore and Thailand are above global averages). In a region where mobile penetration is 124%, mobile data costs must be affordable. The returns to such priority are high ~ one study estimated higher Internet penetration countries reap up to 25% more benefit from cross-border data flows than those with limited penetration.<sup>15</sup>

#### E-Commerce

Some progress has been made, at least on the statute books. It is striking that least progress has been made in putting in place legislation and regulation to protect data privacy and consumer protection ~ the two areas most critical to the development of the digital economy.

Status of E-Commerce Legislation						
Status	Electronic Transactions	Privacy	Cybercrime	Consumer Protection	Content Regulation	Domain Names
Enacted	90%	30%	80%	60%	70%	80%
Partial	10%	30%	10%	30%	20%	20%
None	-	40%	10%	10%	10%	-

Note: Percentages indicate the status of legislation in 10 member states

That gap (and the lag in legislation and regulation becoming effective) explains in no small part why other areas of progress have yet to translate into higher digital transactional activity, whether it be businesses utilizing cloud computing services or consumers converting already high online searches and engagements into digital commerce.

### Pillar III

**Micro, Small and Medium Sized Enterprises** are a vital part of the Southeast Asian story ~ representing up to 96% of all enterprises, 60% to 90% of all employment and 30% to 60% of GDP across the member states.<sup>6</sup> And yet, the programme to make regional integration work for them has (at best) made steady and certainly not stellar progress.

It is striking that all the parameters slated for development ~ access to finance, global supply chain linkages, human capital development (especially women and youth), access to information, fostering innovation ~ digital trade and the free flow of data can make a big, near term positive impact.

It is good to see that the member states have made this an area of focus in the 2025 Blueprint. A digital element of the AEC can only speed up positive change in this pillar.

### Pillar IV

An area where progress has been made. Top-of-mind at present are two over-arching free trade agreements:

- **The Trans Pacific Partnership (TPP)**

Regarded by many as the model for the next generation of trade agreements. Led by 12 like-minded economies, concluded in 2015 but proceeding slower than envisioned through the ratification process. It encompasses 4 ASEAN members.

TPP is notable for its breadth of coverage ~ including IPR, government procurement, labour and environmental standards and, critically, digital trade. The chapter on e-commerce is the first such chapter to attempt to deal (however imperfectly) with the topic in a comprehensive manner.

On digital trade, TPP requires the free flow of data across borders and prohibits the forced localisation of data centres (with exceptions only under limited circumstances). It bars customs duties on digital products, adopts consumer protection laws against online fraud and protects online privacy. It prohibits forced disclosure of software source code by governments or to commercial rivals. TPP also encourages co-operation on cybersecurity and the provision of assistance to SMEs.

- **The Regional Comprehensive Economic Partnership (RCEP)**

Notable for having been initiated by ASEAN and, as for the first time, being negotiated by ASEAN as a bloc. RCEP has been ongoing for almost 3 years and will take several more to come to fruition. It encompasses 16 countries, all within Asia Pacific and (naturally) includes all ASEAN member states.

Understandably, the principal areas of emphasis are market access, supply chain matters and inclusiveness and developmental goals. While there is proposal to include a chapter on electronic commerce, the agreement will likely not include specific provisions on digital trade or on the free flow of data.

These over-arching free trade agreements are mutually reinforcing platforms for regional integration and may be possible pathways for the negotiation of the Free Trade Agreement for the Asia Pacific.



## AEC Blueprint 2025

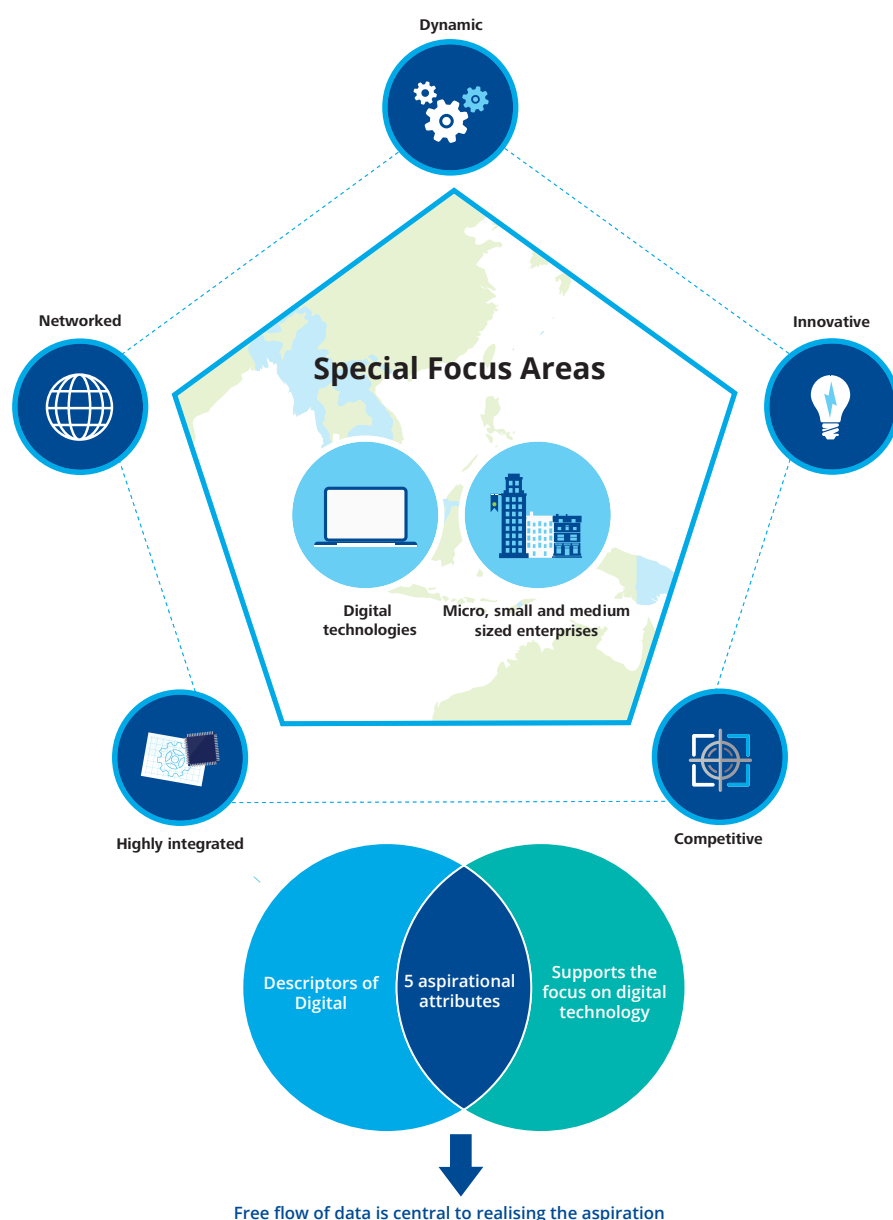
Much has been achieved in the run up to the initial 2015 deadline, but more remains to be done to implement the AEC Blueprint 2025.

The immediate priority for members is to complete implementation of measures unfinished under the AEC Blueprint 2015. But, more than that, the Blueprint 2015 explicitly recognizes that regional economic integration is a dynamic, ongoing process. To that point, it is striking to note that one of the two new areas of emphasis in the Blueprint 2025 is the need to embrace evolving digital technologies.

We couldn't agree more. The digital economy must be an area of special focus for regional integration.

What exactly are the nature of the opportunities that digital trade will bring for an integrated ASEAN? We seek to answer that in the next section.

### 5 Aspirational Attributes





# The opportunities

Most will accept that regional integration and the digital economy together have the potential to transform ASEAN by 2025. To make the most of both, the member states of ASEAN should prioritise the digital economy in their integration plans. Data is key to the growth of the digital economy. Integration requires that data be free to flow across borders.

We focus on five areas where the combination of regional integration and the digital economy will lead to the most opportunity in the next ten years. We highlight how that can happen, showing the link to data by example and by anecdote. Where possible, we have sought to show on-the-ground know-how of businesses from the region that are acting to capture these opportunities.



The Internet  
user base of  
**480M**  
by 2020

## 1. Southeast Asian Consumers go Digital

The digital economy for consumers can be a big part of the growth agenda for Southeast Asia. Many key drivers are in place, but the story to date is one of unfulfilled potential. A framework that ensures data flows is a necessary condition to realise that potential. By the same token, measures (even if inadvertent) that raise barriers will mean a loss of potential economic benefit.

Southeast Asia is the world's fastest growing Internet region. Nearly 4 million new users will come online every month for the next 5 years.<sup>7</sup> That translates into a user base of 480 million by 2020, up from 260 million now. The region has gone mobile first ~ there are over 700 million active mobile connections in Southeast Asia. Not only is the user base large and growing, it is predominantly young (70% are under the age of 40) and increasingly middle class.<sup>7</sup>

And yet, all these consumers only spend US\$30 billion online. Experts predict that spending could rise 6 and a half times to US\$200 billion by 2025<sup>7</sup>, fueled by consumption of electronics, clothing, household goods and groceries and by increased travel within the region. All of the Southeast Asian economies stand to benefit from this, but the big winners are expected to be Indonesia (US\$82 billion or 41% of total market) and Thailand (19%, driven by a large travel market). For that potential to become a reality, 4 changes must take place:



## #1 Build trust.

Southeast Asian consumers are wary of transacting online when shopping. That's understandable just now ~ some countries (Indonesia, Malaysia and Philippines are top of mind) have experienced problems with fraudulent activity. A framework that places data privacy measures at its centre, that utilizes best practices in data security and that does not restrict data flows would be a big step forward.

Because e-commerce naturally flows across borders, enabling the cross-border flow of data, harmonizing privacy and security standards, will ease compliance and improve the consumer and business experiences overall.



## #2 Solve the payments puzzle.

Cash-on-delivery is the predominant payment mode for existing online sales. That makes life more difficult than it needs to be (especially for the fulfillment specialists) and must change for online sales to grow.

Consumers need to be confident that they will receive exactly what they purchased and have effective recourse against online merchants if not.

The low penetration of payment mechanisms is also problematic ~ to illustrate, 150 million adults over 25 in Southeast Asia don't have a bank account.<sup>7</sup> Mobile, for example, could foster faster penetration of online sales. But whatever the mechanism, the imperative is that the cost of making payments must fall for adoption to rise.

All such payment mechanisms need fast, hassle-free exchange of data as a pre-requisite for their operation. Barriers to such flows of data, whether within or between countries, will only put sand in the gears and slow the rate of adoption.

### From Passenger Bookings to Enhanced Customer Experience

Low Cost Carriers (LCCs) are a big success story in e-commerce in Southeast Asia. Travel generated US\$22 billion in e-commerce revenues in 2015 and airlines accounted for the majority of that revenue (around US\$12 billion or 55%). Strong growth is expected ~ experts estimate airline revenues from e-commerce will more than triple to US\$40 billion by 2025.<sup>7</sup>



### A Success Story to Date

AirAsia is a stand-out in e-commerce in Asia. Digital affects many of the most important functions of the airline, but the primary focus is and will be on the customer experience.

To date, the airline has been successful in attracting customers and making the basic sale. In Malaysia, AirAsia's customers deal direct. Online bookings make up 90% of total sales. Success to date makes sense ~ after all, three of four big things identified to grow e-commerce have been done well. AirAsia has built trust with its passengers, employs a robust payments systems and has invested in Internet infrastructure. The net result is that the customer experience is easier, faster and less costly than ever before.



#### Transforming the Customer Experience

But AirAsia isn't for standing still in digital. It knows that only a fraction of the potential of digital has been tapped to date. In the next three years, AirAsia aims to completely transform the customer experience. That transformation starts by learning more about customers' preferences and using that insight to engage before, during and after each flight with targeted offers tailored to customers' preferences and to their circumstances. For passengers, that means a better experience and more value from the airline. For AirAsia, it means greater and profitable ancillary revenues ~ by some estimates, an average of twice as much for each customer.



#### Cloud Computing is a Must

For AirAsia to achieve this transformation, it needs cloud computing. Only by using the cloud, AirAsia can gather data across its network and analyse it in ways that are useful for customer engagement at an effective cost. More than that, low cost is at the heart of the AirAsia business model. Cloud computing fits with the model as it aligns technology costs closely to usage and avoids big ticket, long-dated, inflexible contracts and capital expenditure decisions.



#### Data Must Flow Freely

Success in transforming the customer experience and the requirement to implement cloud computing means that data must be free to flow across the AirAsia network. Some complexity has been introduced into the business by the lack of standardization of information for consumer protection and immigration authorities across Southeast Asia, but to date it is manageable.

#### Cyber Security & Privacy Underpins E-Commerce Success

AirAsia recognises that global best practice for data privacy and cybersecurity is an important component to build customer trust (and that of other stakeholders). At a time where there is heightened concerns about cyber security attacks and privacy breaches, the lack of such trust limits the scale to which AirAsia can expand its business opportunities.

### Success To Date & More to Come

AirAsia is undoubtedly a success story both for regional integration and for the digital economy. It is striking though that only a small part of the potential from both has been tapped to date. Data (and specifically its ability to flow freely across the AirAsia network in the region) will be an essential ingredient for further success in the future.



## Profit margins

estimated to potentially improve between

**US\$25B**  
to  
**US\$45B**  
by 2030



### #3 Play catch up on fulfillment.

Fast and cost-efficient delivery is necessary for widespread e-commerce. The systems that are needed for consumer businesses are different from those for B2B networks. The volumes are higher, the package sizes are smaller, the destinations are more dispersed and there is a greater need for two way capabilities. Such networks are only now beginning to be built. For the specialists doing so, data is critical to their service offering and especially so around the track and trace capability. Allowing data to flow freely will permit players to make best use of existing resources. This is essential to growth as it will take time to deliver the required new transport infrastructure of road, rail, sea and air networks.



### #4 Invest in Internet infrastructure

For e-commerce to be widespread, Internet access needs to be readily available, fast and cheap. Much needs to be done to make that a reality anytime soon, not least by enabling and by awarding additional bandwidth. The investment involved are very large. To attract the required number and scale of commitments, investors need to know that their investment can be utilized fully and efficiently. As has been demonstrated by the survey below, the free flow of data will be a necessary condition to getting the investment funds flowing.

#### Investor sentiment on Digital <sup>8</sup>



**75%** are uncomfortable when regulatory frameworks are ambiguous

**81%** wouldn't invest if government can confiscate without court sanction

**78%** wouldn't invest if user data must be disclosed to law enforcement outside international standards

**67%** are uncomfortable if legally obligated to localize data

In sum, the digital economy offers the promise of positive change for consumers in their everyday lives. At the same time, it can expand economic growth across Southeast Asia whilst at the same time making Southeast Asia the dynamic, networked, innovative, highly integrated and competitive region it wants to become.

### 2. Manufacturers Embrace Industry 4.0

Although Southeast Asia is already a major global manufacturing centre, deeper regional integration and the adoption of disruptive technologies offers up the alluring prospect of improved competitive advantage over other Asian regions. Done right, new technologies can boost efficiencies and lower costs.

Southeast Asia accounts for 5% of global manufacturing activity, measured by value added. It holds dominant positions in chemicals, food and beverage, metals and automotive manufacturing. While that's all good, the current position belies the region's potential.

The cold, hard reality is that value chains in the region haven't yet adapted to the opportunities that do and will exist through deeper integration.

A telling sign is that intra-regional trade remains at or around 23% of total exports. Value chains should be more dispersed, more connected and more networked, which will see intra-ASEAN trade rise exponentially. When value chains adapt, manufacturers will see a big boost in efficiencies and lower costs ~ by some estimates, up to 20% of costs across the board (while, at the same time, boosting demand and raising consumer surplus).

Even greater benefits can be derived if regional integration is paired with the adoption of disruptive, exponential new technologies (Industry 4.0 or similar). Manufacturers in Southeast Asia have been slow to adopt and lag their counterparts in the US, Germany and Israel. Like integration, adoption has the potential to make a big positive impact on profits ~ one expert estimated an increase of between US\$25 billion to US\$45 billion by 2030.

Three developments are stimulating this change, two of which have a direct link to digital:



### #1 Southeast Asia's improving competitive position, relative to China

China is the manufacturing hub for the world. But as its key driver changes from exports to consumption, labour costs are on the rise.

That shift spells opportunity for Southeast Asia where costs can be lower. At Deloitte, we have seen some manufacturers moving and can attest that more are



SMEs employed  
**70%**  
 of total  
 employment but  
 only generated  
**33%**  
 of the GDP

inclined to do so. For that to continue and to gain momentum, Southeast Asia must match China in productivity (an imperative, but not one to cover in this document) and in certain of its fundamentals. The fundamentals in manufacturing where China wins big are its large domestic market, a well-developed supply base, a deep pool of engineering talent and its advanced infrastructure. Regional integration is directed at exactly this to level the playing field.



### #2 More networked, more connected

The regional integration at the heart of the AEC will increase competitiveness for manufacturers in Southeast Asia through higher efficiencies and lower costs.

Efficiencies rise with consolidation of plants into fewer locations, each with greater scale and specialisation. Cost reduction comes by pushing processes to the most cost effective locations (whether done in-house or outsourced). The net result is lower inventories, less obsolescence and lower working capital, all while increasing levels of intra-ASEAN trade (especially in semi-finished intermediates).

These changes are happening, but not quickly enough. In most emerging markets digital equates to e-commerce platforms. It is telling that such platforms are highly evolved in China, but are only nascent in Southeast Asia.

That needs to change. For the most benefit, the related logistics need to be optimized ~ put simply, trade across borders must be quicker, easier and cheaper. Duplication of processes needs to be eliminated and the remaining steps need to be simplified and wherever possible automated. Sharing of real time information can only be accomplished when the underlying data flows quickly, easily and completely.



### #3 Adoption of disruptive technology

The manufacturing experts in Deloitte tell us that manufacturers in Southeast Asia trail in adopting new technologies.

The potential is well understood, but

most manufacturers are not acting to leverage exponential technologies (with the exception perhaps of 3D printing). Some manufacturers feel that their systems are not ready for Industry 4.0; others are concerned as to the impact on talent (either the disruption to existing workforces, or are unsure as to the talent need or feel that the required talent is in short supply); and fear of increased incidence and costs of cyber-risks is slowing adoption.

But there are strong incentives and imperatives to change. With the advent of Internet of Things (IoT), Big Data and other similar phenomena, there is a driving need to improve demand forecasting, to optimize production planning and to tighten inventory control. Done right, such disruptive technologies significantly lower costs and increase profit levels.

Policy-makers can help in making the manufacturing sector more proactive. Leadership and direction would be welcome both as to which segments will be supported and as to how digital can be harnessed to key industries. Such direction can then be supported by co-ordination of policy and encouragement and incentives to boost adoption of disruptive technologies.

### In Summary

Southeast Asia has an opportunity to up its game in manufacturing. Changes in China have opened up a significant opportunity. Regional integration (through tariff reduction, non-tariff measures harmonization and the liberalization of services) is a way to level the playing field. But the benefits are biggest (in terms of speed, extent and ease of capture) if integration is allied to a more wholehearted embrace of digital in manufacturing.

### 3. Digital Empowers & Enables the Region's SMEs

SMEs are a critical stakeholder in the ongoing development of Southeast Asia. They contribute 70% of employment in the major ASEAN economies. And yet, the potential of these enterprises have yet to be tapped.

Digital holds the potential for SMEs in Southeast Asia to develop further by enabling access to new and larger markets and to more profitable opportunities than available only in their immediate locality.

The AEC Blueprint has called out SME Development as one of the two core elements in Pillar 3. Within that element, there is an identified need to focus on building better links into global supply chains, to give better access for SMEs to information and to fostering innovation within SME communities.

The simple fact is that SMEs in ASEAN underperform relative to similar businesses in other regions.

For SMEs as a class, an EU Commission report indicated that SMEs employed 90 million people in the EU (or 67% of total employment) and generated 58% of GDP in 2013.<sup>5</sup> In ASEAN, a Deloitte report found that SMEs employed roughly the same proportion (in fact, 70% of the workforce) but only generated 33% of GDP.<sup>6</sup>

What is true for SMEs as a class is also true for startups. In Southeast Asia, a total of US\$1.1Bn was invested in startups in 2015 in 355 deals. The count of all such businesses in Southeast Asia stands at about 7,000. In Europe, the equivalent statistics are US\$13.2Bn invested in 2015 in 1,516 deals. The ASEAN startup landscape is very young and immature.

Digitalisation has far-reaching impact on SMEs. When connected to markets through the web, these businesses (regardless of current revenue and employee size) are able to access global markets for both customers and suppliers.

As an illustration of the new networks that are being formed by digital, it is easy these days for a European shopper to buy shoes on Amazon that are prototyped in the US, manufactured in Vietnam from materials supplied from Sri Lanka, Cambodia, US and Vietnam and packaged in Indonesia.

With digitalisation, service providers like artisans, app developers, freelancers and small businesses participate directly on digital platforms with global reach. SMEs are agile and adopt technologies much faster if provided with the right opportunities.

The acceleration of “catch-up” growth, both in case of greater SME contribution to the economy and in terms of startup segment fostering innovation and challenging incumbents, is a major opportunity for ASEAN. Data flows will enable access to customers, suppliers, trade opportunities ~ in a nutshell, bigger and better markets for more profitable opportunities.



**A Deloitte survey in Australia of 500 small businesses indicated that digitally engaged small businesses are...**



**2x more likely** to be growing revenue



**Job Creators**, being **4x more likely** to be hiring and use Internet as a critical facilitator for growth.

## Applying Smart Data to Agriculture

When they founded Dattabot in 2003 (known then as Mediatracc), Imron Zuhri and Regi Wahyu thought the big opportunity was building data warehouses and managing data gathered from mass, social and online media in Indonesia. But very quickly, they realised that it was near impossible to build and sustain competitive advantage in that space and that it needed big investment dollars (which they didn't have or have access to). In getting to that realisation, the two friends learned that there was more value available in cleaning up data, integrating it with other datasets and in analysing it to provide insight to customers to be used in decision-making. From that insight, Dattabot grew rapidly in the field of data analytics in Indonesia.



### The Opportunity in Agriculture

Dattabot serves a range of industries, but one that has a special place is agriculture. Its subsidiary, Collective Intelligence Agriculture (Ci-Agri, for short), has been developed around the simple observation that farming in Indonesia has historically been low-tech, low-productivity and low-yield but that the application of smart data can make a big change for the better.

Ci-Agri has worked for two years on a pilot programme with 4,000 farmers in Lampung, South Sumatra. It has developed a suite of three modules that address farm and farmer productivity, using a two-part business model ~ the first, a subscription-based model for land-owners (who, in turn, work with smallholders or contract farmers); and a second, a fee-for-service model used for credit-scoring for small ticket lenders to land-owners and farmers. Ci-Agri has commercialised the first and expects the second to be in place by 2018.



### Favourable Responses So Far

The experience to date is that stakeholders are uniformly enthusiastic about the service, when they fully understand the proposition. Land-owners see big benefits in higher yields and lower costs, and all with more transparency and traceability across the value chain. Farmers also benefit from higher yields and lower costs, while building their own know-how and expertise. In time, both should benefit from improved access to working capital financing (which is a major hurdle for the development of SMEs) as the track records of individual credits becomes better known.



### Policymakers can Support Growth

Ci-Agri in particular (and Dattabot more generally) is a business with data as its centre. Put simply, the bigger the data set that is made available, the more value that can be created. There are three areas where policymakers can lead which will allow Ci-Agri to grow further and faster:

#### 1. Regulatory certainty

So long as there are uncertainties regarding the use, privacy and security of data, owners will hesitate to join the Ci-Agri programme. Action now to clarify on each of these three critical areas will give the stakeholders the confidence they need to participate in the scheme.

#### 2. Set an example

There are large pools of data within the control of various branches of government which could be put to better use. While summaries have been made available, those who rely on data need it at a disaggregated level. Perhaps in a small, controlled and trial basis, government can set an example by making disaggregated data available to the private sector to use at a regional level.

#### 3. Build out Internet infrastructure

Across the country, Internet penetration is too low and access speeds are too slow. Granting priority to investment in Internet infrastructure will have quick, large and lasting positive impacts even in rural areas.

## The Regional Opportunity

Dattabot is a young, medium-sized company going places. With its focus on data analytics, it is a business which has a lot to offer a wide range of Indonesian and ASEAN businesses. What is undoubtedly true for productivity in agriculture in Indonesia is multiplied if taken across the region ~ after all, agriculture contributes 48% of total employment in Southeast Asia<sup>14</sup>, but only 10% to total GDP. Ci-Agri and Dattabot could in time regionalise ~ but only if data can move freely across the region.

#### 4. Finance Goes Digital ~ At Last...

Elsewhere in Asia, the digital economy has done wonders to innovation, development and growth in finance. The benefits spread across a range of stakeholders, but are especially focused on the underbanked, the unbanked and SMEs. In Southeast Asia, much of what is needed is now in place. With supportive policies and regulation, finance in Southeast Asia has the potential to quickly go digital.

##### China's Lead in Digital Finance Adoption

One standout example of innovation in digital finance as a next generation growth engine is the recent experience in China. As one data point, 358 million people in China made payments via their mobile devices in 2015 ~ an increase of nearly two-thirds from the year before.<sup>12</sup> Underlying this success has been sustained growth in domestic consumption and the rapid expansion of Internet access (particularly mobile first, as smartphones have become ubiquitous). At the early stages of industry growth, China's policy and regulatory environment encouraged innovation and allowed for experimentation. Foreign and domestic businesses responded by deploying leading edge technologies (especially cloud computing and data analytics) to drive exponential growth in digital finance. China's market has enabled the successful development of world class, large-scale digital finance platforms, such as Alibaba and Tencent. These firms also profited by proliferating start-ups in digital finance, employing leading edge technologies across those start-ups and deploying resources to scale success very, very quickly. While there are positive lessons to be learned for Southeast Asia from the Chinese experience in digital finance, China's current model is not a template to be copied wholesale because it contains regulatory approaches to privacy, security and equal market access which would constrain investment in ASEAN's emerging local startups and limit the full potential of digital finance to support domestic consumption led growth.

##### Things Are Changing in Southeast Asia

Recent reports give grounds for optimism that things are changing in Southeast Asia. Doubtless Internet use remains lower in Southeast Asia than in China ~ in mid-2016, China had 760 million Internet users (more than half the population), whereas the same measure for Thailand was 43% and for Indonesia was 20%. But behaviour appears to be changing. A recent McKinsey survey found that consumer use of computers, tablets and smartphones to access banking services in Southeast Asia grew rapidly from 2011 to 2014 ~ by 1.7 times in Singapore, Malaysia and Thailand and by 6.3x for Vietnam and 7.2x for Indonesia. The Southeast Asian consumer is increasingly sophisticated and is ready to embrace digital and mobile finance.<sup>13</sup>

##### How Will Change Happen?

The fact is that the young and the affluent have and

will continue to lead adoption of digital finance. By one measure, consumers in their 20s in most of Southeast Asia are at least 50% more likely to use digital banking than those in their 40s.<sup>13</sup> It will also likely start with payments ~ online, third party platforms will proliferate, grow and gain market share by providing faster, more transparent and customized payments experiences for consumers. Only then will the offering spread out to a wider range of financial services ~ from payments to loans and distribution of financial services such as funds, insurance and brokerage.

##### Digital Aids Financial Inclusion

When the change happens, it is all but certain to disproportionately benefit two key stakeholder groups persistently facing credit supply-demand imbalances:

- Underbanked and unbanked consumers ~ digital finance will open doors to large numbers of individuals who presently have little or no access to financial services. The scale of this group and the opportunity they represent is staggering ~ the World Bank estimates that 73 to 80% of people in Indonesia, the Philippines and Vietnam and about 30% in Malaysia and Thailand have no banking relationships presently.<sup>13</sup>
- The region's SMEs ~ digital finance will become a growing source of funding for SMEs, persistently and habitually underserved by traditional channels. Looking once again to the China example, a survey cited that SMEs comprised 90% of Chinese enterprise, but were less than one third of outstanding corporate loans. That is starting to change as digital finance takes root.

##### Data Drives Success in Digital Finance

Amongst other things, it has been a fragmented and incomplete credit information infrastructure which has made it difficult to determine creditworthiness. With the ability to access data from upstream and downstream clients as well as from other data sources made public, businesses have been able to and will again build the online credit assessment systems in Southeast Asia which can be used to make better decisions in lending of these key stakeholder groups. The ability of data to flow freely across borders makes for bigger data sets, for better analytics and so for more powerful tools to drive growth. The efficiencies created by digital finance helps firms better manage their balance sheets



## 5. A More Vibrant Investment Environment

Investment is an important driver of growth and Southeast Asia is one of the highest growth regions in the world. Both regional integration and the emergence of a digital economy will be major drivers of investment opportunity in the next decade. Whether sourced domestically, from the region or further afield, empirical evidence shows that capital is very sensitive to regulatory ambiguity and especially so to regulation that either reduces viability of investments overall or that makes it more difficult to assess investment returns.

Southeast Asia has a long history of attracting investment capital and deploying it profitably. In its review of foreign direct investment in 2015, UNCTAD conducted a poll of a range of foreign investors which reported an expectation that volumes of foreign direct investment would continue to grow through 2017.<sup>5</sup> That was especially true in Developing Asia (of which, Southeast Asia is a part) where 64% of those polled said they would increase investment over that period (as opposed to 20% who said they would cut it). Regional integration and the emergence of the digital economy will be critical factors in sustaining that momentum to 2025. In the same UNCTAD report, a large proportion of investors who noted they would seek to increase their investment in developing Asia were in the high tech, telecoms and manufacturing sectors. This view is supported by anecdotal evidence. For example, a recent report cited that the equity capital needed for businesses to build a US\$200 billion digital economy in Southeast Asia by 2025 is between US\$40 and US\$50 billion.<sup>7</sup> That is for the businesses undertaking the services; it does not include the infrastructure needed to support the related jump in data flows. To size that need, another expert cited that the telecommunications companies in the ASEAN-6 are planning to spend over US\$46 billion on capital expenditures to 2019 just to build capacity to handle the higher data flows.<sup>11</sup>

There is a well-documented link between the readiness of investors (of whatever type) to deploy capital and the policy stance taken by regulators.

Investors react favourably (either by deploying capital more readily or in greater sums) if the actions taken by policy makers make the local and regional digital sectors of the economy more robust. In one report in 2016, this generality was made specific in a poll of investors (which included Indonesia, Thailand and Vietnam as 3 of 15 countries covered). Equally important, investors react negatively when there is ambiguity as to the direction that regulators may take. Digital economy businesses are more prone to be adversely affected by emerging regulation of new business models. For the survey cited, 75% said that ambiguity on regulation would either make them think twice about investing at all or significantly reduce the amount of capital invested.<sup>8</sup>

### In summary

The digital economy is a major opportunity for Southeast Asia as a whole and has the potential to be a driver of integration across the region. The digital economy reflects all the desired attributes for the region as a whole – dynamic, networked, innovative, highly integrated and competitive, and meets all the priority pillars of ASEAN integration.

With concerted action by policy makers and collaboration with business, the undoubted potential of integration and digital can become a reality.



**66%** of those polled favour countries that are open-minded on **new business models**

**65%** favoured countries with governments who invested or enabled investment in **Internet** and **mobile** infrastructure

**62%** gave preference to countries which promoted **open data use**

**57%** favoured countries whose governments released **transparent regulatory roadmaps** and who consulted stakeholders on new regulation

**67%** of investors (in Indonesia, it was 82%) are uncomfortable investing in digital businesses **obligated to store user data locally**



# Challenges

## Focusing on the Big Issues

The opportunities arising from digital within ASEAN will be many and its overall impact substantial. But, such opportunity will bring with it specific challenges that will require to be addressed.

### Part A: Generic challenges

Three issues are likely to predominate:



#### Digital = Information Technology:

When one mentions digital, the immediate reaction of many is to consider the matter as a narrow, technological topic. And yet, this is self-evidently not the case. Indeed, to do so is to miss the big picture. Digital impacts nearly all sectors. It has been estimated that over 75% of the benefits arising from the digital economy accrue to businesses that do not have a specific focus on technology.



#### It's a High Income Economy

**Issue:** Diversity is one of the defining characteristics of ASEAN. Some may feel that the digital economy is only a priority for the economically more mature and higher income nations. In fact, the opposite is true ~ the free flow of data has been shown to have a disproportionate impact on the micro, small and medium sized enterprise segment of business and the lower income consumers. Put simply, digital can significantly reduce costs, provide products and services to a broader range of consumers and increase access to newer and bigger markets. As economies like the Philippines have demonstrated, digital can also assist in financial inclusion, with payment systems such as M-Pesa proliferating.



#### Limited Regulatory Bandwidth:

The fact remains that the resources available to the member states are limited and much of the time, energy and money available will be directed to implementing that which is committed, but not yet done. It is to be expected that limited resources will be made available for new initiatives. Acknowledging this to be the case, the free flow of data should rank at the top of the list as to impact all the key priority areas on the 2025 Blueprint.

The manner in which change is implemented within the ASEAN framework will also represent a specific type of challenge. The ASEAN Way and the ASEAN minus X formula will mean change will be incremental, will take time to build the required consensus and will be achieved gradually and in waves. That isn't a reason not to start, but is rather a factor to be borne in mind when setting expectations for timelines.

## Part B: Specific challenges

There are three major specific challenges that will be encountered when seeking to develop the digital economy in Southeast Asia:



**Data Localisation:** Data naturally flows across borders, unless nation states choose to erect digital barriers. When such barriers are put in place, they typically involve requirements to store data locally, to process data locally or to use local data service providers. Whatever the specifics, such barriers harm overall economic welfare in exactly the same way as happened in the past with goods and services through tariffs and non-tariff measures.

Interest groups who press the case for data to stay local do so under the guise either of boosting local enterprise and jobs or of keeping data safe. In fact, the policies that they are advocating inhibit growth of local enterprise ~ either for small and medium size enterprises who are adversely affected disproportionately or by sending a very negative signal to global companies participating in local development. The reality, as demonstrated in a number of locations and by a wide range of independent experts, is that the harm of data localization far outweighs any benefits that are claimed. Specifically:

1. Requirements to localise limit access for business and consumers in the affected nation to access digital commerce networks. The cost in this case is fewer opportunities, less choice, less service and frequently higher cost.
2. Restricting data to local markets constricts access for business and consumers in the affected nation to online resources and opportunities.
3. Imposes limits on the ability of leading businesses to synthesise large data sets. This in turn deprives local business and consumers of improved products and services perhaps at lower costs.
4. By imposing a requirement to invest in what are frequently sub-scale facilities, reduces overall levels of efficiency and raises the costs of doing business for those that the local providers serve. Worryingly, steps down this path may encourage others to retaliate leading to the fragmentation of the Internet.
5. Increases cyber security risks by creating multiple entry points in global platforms.

In sum, data localisation causes harm by reducing opportunity, crimping innovation, limiting choice, lowering service levels, creating cyber risk and raising costs.

There is a need to build a regional consensus and a regime that provides for the free flow of data across borders within ASEAN, while addressing reasonable privacy and security concerns.



**Cyber Security:** Digital data needs to be protected against breaches, thefts and attacks.

In the private sector, concerns centre on consumer data breaches, financial crime, market manipulation, business disruption and the theft of intellectual property.

For the public sector, the principal concerns are around public safety and national security.

In Asia in general and Southeast Asia in particular, these threats seem clear and present ~ eight out of ten countries most threatened by cyberattacks are Asian and of those eight, four are member states of ASEAN<sup>2</sup>.

So, concerns around cybersecurity are understandable. The good news is that much has been done as part of the AEC already (a fact acknowledged in a recent UNCTAD report<sup>10</sup>). The ASEAN ICT Masterplan 2020 promises more policy actions of the right type, including:

1. A guideline for personal data protection.
2. A best practice guide for information and network security, including cloud computing.
3. Initiatives to identify critical infrastructure and best practice to coordinate protection and response.
4. An incident reporting framework.

The private sector can and should have a large part to play in the development of the digital economy framework. It is private security companies and public cloud providers that are now frequently at the forefront of innovation in cybersecurity for data and communications. Their global experience, deep resources and expertise and multinational operations are invaluable in overcoming local vulnerabilities. Regulations that enable consumers and businesses to access these public cloud services and solutions is the path to greater security and privacy protection.



**Data Privacy:** Concerns around data privacy are understandable. If data is to flow freely, it is reasonable that frameworks to address legitimate privacy concerns need to be in place.

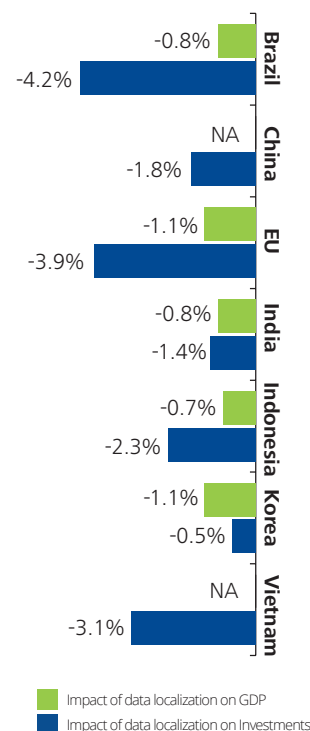
The good news is that much has been done in ASEAN to put those legislative and regulatory frameworks in place. Malaysia started the ball rolling by passing privacy legislation in 2010, followed by Philippines and Singapore in 2012. Indonesia and Vietnam both have partial privacy legislation in place (contained in their omnibus ICT laws). Thailand has been discussing draft general data protection legislation. Brunei has just begun discussing privacy legislation and is watching the experience of Malaysia, Philippines and Singapore closely. Cambodia, Laos and Myanmar have not yet begun significant work in this area.

We understand that Singapore is leading a regional initiative to develop a set of personal data protection principles for the region. The framework is currently in the final stages of drafting and is expecting to be endorsed shortly. While it will not be a binding instrument, it will be a good starting point for the region and paves the way for future improvements.

Of course, more can be done and improvements can be made. The APEC Cross Border Privacy Rules (CBPR) system is one framework that ASEAN can look to as a positive example to be replicated for the region. The APEC CBPR system requires participating businesses to develop and implement data privacy policies consistent with the [APEC Privacy Framework](#). These policies and practices must be assessed as compliant with the minimum program requirements of the APEC CBPR system by an Accountability Agent (an independent APEC CBPR system recognised public or private sector entity) and be enforceable by law. Similarly, specific to ASEAN, steps should be taken to ensure that there are both agreed standards as well as mutual recognition that such standards are adhered to.

There have been situations in ASEAN where data privacy has been cited (most commonly along with the other specific threats) as a reason for governments to impose data localization policies and regulations. The reality is though that requiring data to stay onshore does little to protect privacy. As long as there is a legal nexus to an ASEAN member state, the entity concerned is subject to the laws and regulations of that state; moving data does not and should not give a free pass to ignore laws and regulations.

**Impact of data localization on GDP and investments**



**67%** of investors are uncomfortable investing in Internet businesses that are legally obligated to store user data on servers located in the same country where users are located and/or build their own data centers locally in each country of operations<sup>8</sup>

# The Call To Action

## **A Unique Combination**

The digital economy can be a powerful, positive force for regional integration in Southeast Asia. It is for that reason that ASEAN should prioritise the digital economy in its integration plans. Doing so will bring Southeast Asia closer to the higher growth, less volatile, more innovative and more inclusive region that it aims to be.

## **Substantial Upside**

The upside is clear, near and sizable. It is an opportunity with five large elements:

### **#1 Southeast Asian Consumers Go Digital**

The consumer economy can be a significant boost to growth with digital. But the story to date is largely one of unfulfilled potential. AirAsia, as a leader in travel in Southeast Asia, has successfully begun to harness digital in its business. But for the potential to be realized by many more Southeast Asian firms, action is needed to build consumer trust, to make online payments safe and ubiquitous, to foster development of fulfillment capabilities and to make Internet connections fast and affordable. Only then can success stories like AirAsia be sustained, enhanced and multiplied.

### **#2 Southeast Asian Manufacturers Embrace Industry 4.0**

Digital can also make for a step change in the competitive position of manufacturing in Southeast Asia. New, disruptive technologies can make for big efficiency gains (through better demand forecasting, closer linkages to production and more tightly controlled inventories). Digitisation can also make supply chains both more networked and more distributed, while still containing logistics and transaction costs.

### **#3 Digital Empowers the Region's SMEs**

Success for regional integration demands that its benefits be spread across the community. Small and medium sized enterprises (whether traditional local enterprises or new economy start-ups) are a key market constituent. As shown by mediatrac, integration and digital trade allows this community to tap into a bigger, deeper marketplace while providing an important source of innovation and efficiency.

### **#4 Digital will drive innovation, development and growth in finance**

Innovation in digital finance will bring substantial, widespread benefits to Southeast Asia. The underbanked, unbanked and the region's SMEs will benefit disproportionately. The efficient use of data will build the online credit assessment systems that will allow financing to flow more efficiently through the value chain and allow firms to better manage their balance sheets.

### **#5 A More Vibrant Investment Environment**

New and bigger markets in Southeast Asia will make for more and better investment opportunities. That happens whether by investing directly in the businesses that are tapping into these opportunities or through financing the infrastructure that these businesses will use. Integration and digital trade makes existing investments better, opens up more opportunity to invest and increases the number of channels in which capital can be productively deployed.

Failure to act will mean substantial opportunity foregone.

## **Data Must Flow Freely**

Businesses increasingly rely on the ease of the digital transmission of data. Indeed, data is the lifeblood of the digital economy. Southeast Asia must allow data to flow freely across borders for the digital economy to thrive.

## **The Time For Action is Now**

The world has changed dramatically since the AEC was conceptualised. The pace of change will only accelerate. As regional integration enters a new phase, Southeast Asia must create the conditions to get the best outcome from the digital economy.

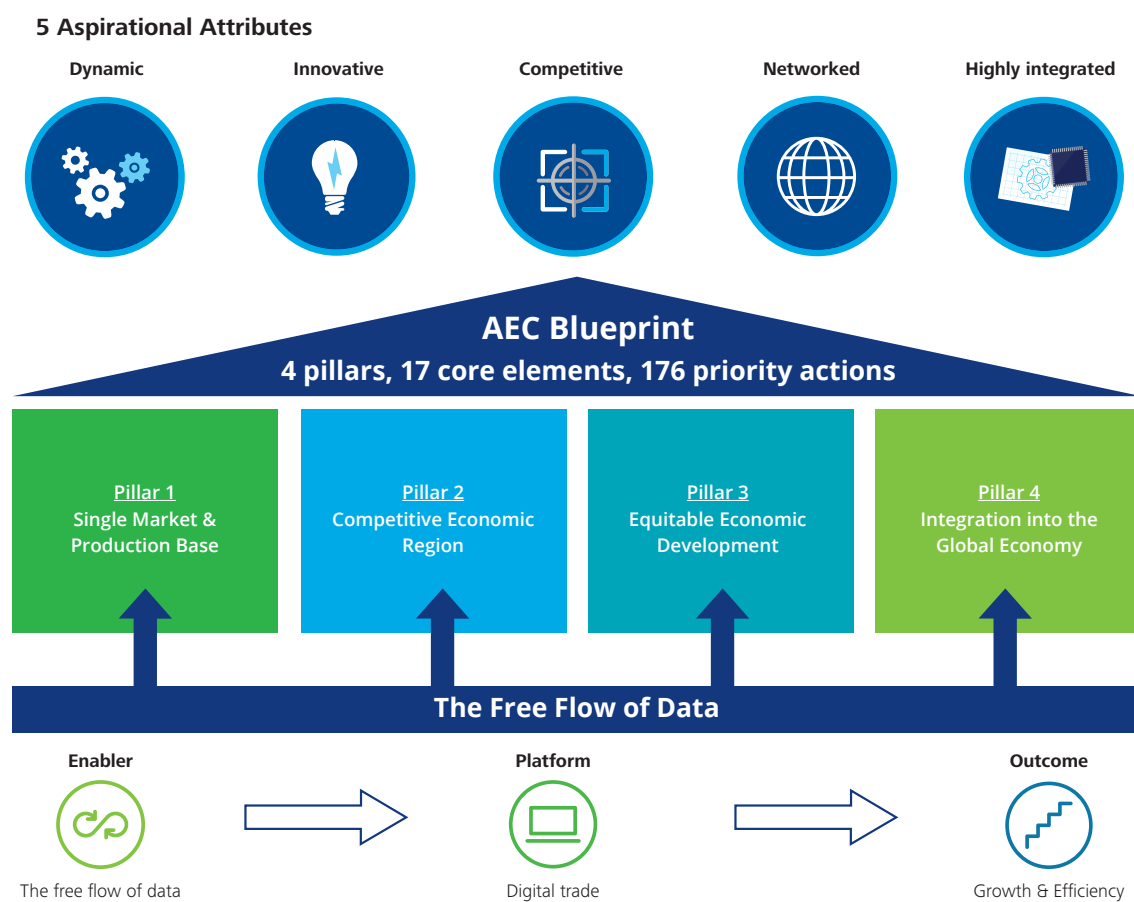
A programme of change to bring the digital economy front and centre in the AEC framework should, from our point of view, have the following elements:

1. Identify the digital economy as a core priority for the ASEAN Economic Community as a whole.
2. Commit to a new initiative to make ASEAN digital ready across every sector so as to capture full benefit from the digital economy.
3. Undertake a gap analysis in each member state to identify the laws and regulations that need to change to be done to make the country digital ready.
4. Recognise data as a horizontal and not a vertical issue. Most, if not all, business will be affected. Ensure that all key stakeholders affected (including businesses and regulators) are integral to the process.
5. Make the adoption of a cross border framework that allows data to flow while protecting the privacy and security of data for Southeast Asian consumers a near term priority and ensure it embodies the best of what is available globally.
6. Support the development and deployment of cloud computing so that consumers and businesses have access to public cloud services and solutions with the best available security and privacy protections.

## A Final Word

Southeast Asia aims to be more integrated, dynamic, better networked, more innovative and ever more competitive. Regional integration is a big part of how that aim can be realized. The digital economy has the potential to make that happen better, faster and more completely.

The best outcome demands that data remain free to flow, subject of course to the legitimate demands of consumers and others to privacy and to security. The time is now to put in place a framework that secures the best outcome for Southeast Asia.



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