Trade in the Digital Age: Can e-Residency be an enabler for Asia-Pacific Developing Countries?

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Highlights

The advent of the digital age in international trade has opened new possibilities for countries at all stages of development. Digital trade can support the achievement of the United Nations Sustainable Development Goals (SDGs) and increase economic prosperity worldwide. However, many developing economies, and particularly least developed countries, often lack the digital infrastructure and legal and policy frameworks to enable their citizens to seize these opportunities. This note reviews how the prospects for digital trade can be enhanced by “e-Residency” programmes which offer remote access to another country’s digital infrastructure. Key findings:

- The digitisation of the economy is transforming international trade, helping overcome barriers related to transport and other transaction costs. While global trade in goods and services has lost momentum, cross-border data flows continue to expand rapidly and may grow by a factor of nine in the next five years.
- To seize the economic benefits of digitisation, governments around the world will need to enhance physical communications infrastructure while at the same time developing an enabling policy environment for individuals and businesses. However, many Asia-Pacific developing economies are lagging behind in these respects.
- e-Residency programmes, such as the programme being developed in Estonia, provide a gateway to another country’s digital infrastructure and policies, allowing people to conduct business around the world, regardless of their place of residence or nationality.
- The Republic of Estonia has been a pioneer in the provision of digital public services to its own citizens and is now offering e-Residency (a transnational digital identity) to anyone in the world. e-Residency confers the opportunity to open and run a location-independent business online that operates within the EU legal framework.
- These schemes are an emerging option that businesses and entrepreneurs in developing countries can use to overcome deficiencies in domestic policy or infrastructure and better integrate themselves into global trade.

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The growth of digital trade

The diffusion of digital technologies and the digitisation of many products and services are transforming global trade. Already today, cross-border digital flows of previously physical items—from books, to music, to design files that enable 3D printing of physical objects—have become commonplace. Online marketplaces make it much easier to match buyers and sellers of goods and services, often in different countries. This digitisation has lowered both marginal production costs (delivering an extra edition of a digital book) and transaction costs associated with barriers of distance (for instance distribution and shipping). These transformations can make it easier for small- and medium-enterprises (SMEs), or even individuals, to engage in global commerce. For developing countries, traditionally disadvantaged by distance from consumer markets, weak infrastructure, and low economies of scale, digital trade has great potential to boost their integration with the global economy and drive socio-economic development. At the same time there are risks that a failure to foster greater connectivity (including technological capabilities) in developing countries could exacerbate a ‘digital divide.’

The phenomenon of ‘digital trade’ remains complex and rapidly evolving, and studies of its impacts are at a nascent stage. A recent McKinsey report identified three distinct trends (Lund and Manyika, 2016):

- The increasing creation of purely digital goods, such as books, films, or music: these can be reproduced and sent across the globe virtually without additional cost (once suitable ICT infrastructures are available).
- The expanding use of “digital wrappers” – the attachment of digital information to goods and components - to enhance and enable physical flows. Sensors embedded in products, for example, can help companies track and improve inventory stocks and flows within global value chains, thereby making them more efficient.
- The emergence of online platforms for digital trade that reduce search costs between buyers and sellers of goods and services. Examples include e-commerce sites, such as Amazon, Alibaba, Airbnb and Etsy, which give individuals and small businesses global reach for their goods and services. Digital platforms also allow new forms of remote working and virtual collaboration. Amazon’s ‘Mechanical Turk’ platform, for instance, provides a global online market place for workers who can be hired to perform even ‘micro-tasks.’

The scale of existing digital trade is difficult to measure, and definitional issues remain unresolved (see box 1). Nevertheless, many facts point to the rapid growth in different aspects of digital trade. The flow of digital information around the world more than doubled between 2013 and 2015 alone, to an estimated 290 terabytes per second (Financial Times, 2016). According to one estimate, approximately 12 per cent of global trade in goods trade is already conducted via international e-commerce (Lund, 2016). Digital trade encompasses both business-to-business (B2B) and business-to-consumer (B2C) transactions. By some estimates B2B transactions account for up to 90% of total e-commerce, but data remains more limited in this area (ADB, 2015).

In line with global trends, the Asia-Pacific region has seen notable growth in digital trade, particularly in the business-to-consumer segment where the region accounts for around a third of all transactions. Most of these sales are between domestic buyers and sellers but cross-border transactions are also growing. In China, cross-border B2C e-commerce was worth $43 billion in 2013 and is forecast to reach $160 billion in 2018 (ADB, 2015). Labour forces in the region are also increasingly shaped by online working, often outsourced from overseas markets. In the Philippines – one of the global leaders in outsourcing – an estimated 4.8 per cent of the workforce is engaged in online working (Lund and Manyika, 2016).

Further rapid growth can be expected driven by, first, the increasing digitisation of goods and services, and second, by the rise in the number of online consumers and businesses as high-speed internet access
spreads across previously unconnected parts of emerging economies – often with smartphones rather than fixed-line connections being the first means of accessing the internet. As access and connectivity continue to rise, it is expected that by 2020 the Internet will have more than 1 billion new users, with many of these located in the Asia-Pacific (Bock et al., 2015).

Box 1: Defining and measuring digital trade flows

There is no single definition of ‘digital trade’ and approaches to measuring it in previous studies vary. However, different methodologies capture different elements of the various phenomena being driven by the intersection of technology and globalization.

World Trade Organization (WTO) – In the WTO the term ‘electronic commerce’ has been generally employed rather than ‘digital trade.’ The WTO Work Programme on E-Commerce was launched in 1998. Under this programme the term ‘electronic commerce’ is understood to mean “the production, distribution, marketing, sale or delivery of goods and services by electronic means” (WTO, 2015). Despite the efforts to date, WTO members have so far failed to agree on a new multilateral regime for digital trade or electronic commerce and the WTO does not report separate trade statistics in this area. WTO members have, though, agreed to continue the practice of not imposing customs duties on electronic transmissions for the time being. Additionally, the WTO Information Technology Agreement lowers tariffs on ICT goods, and was renegotiated in 2015 to expand and update product coverage but given the constant pace of new product creation in the sector the agreement is likely to necessitate further updating in future. Likewise, digital services are only partially covered in the specific General Agreement on Trade in Services (GATS) Commitments of WTO Members because the ‘positive list’ approach requires active national commitments with respect to newly developed services (Weber, 2010).

Organisation for Economic Co-operation and Development (OECD) – An OECD study discussed some of the issues around measuring the internet economy in general, within which cross-border digital trade would be a sub-category. They observed that most existing industrial classification systems are too broad to identify relevant digital trade-related activities and that new composite approaches may be needed to get a handle on the rapidly evolving digital economy (OECD, 2013).

United States International Trade Commission (USITC) – USITC have adopted a relatively narrow definition of digital trade as the delivery of products and services over either fixed-line or wireless digital networks. It excludes commerce in most physical goods, such as goods ordered online and physical goods that have a digital counterpart such as books and software, music, and movies sold on CDs or DVDs (USITC, 2013).

European Union (EU) – The EU has set the ambition of creating a ‘digital single market.’ This is defined operationally as “an area where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, irrespective of their nationality or place of residence” (European Commission, 2016). This initiative goes beyond reforms to improve the environment for e-commerce and also embraces increasing competition in the telecoms sectors and improvements to data protections and privacy provisions.

McKinsey Global Institute – McKinsey studies have used the volume of cross-border data flows as a primary measure of trends in digital trade. This broad measure encompasses the direct exchange of digital goods, and digitally enabled exchanges of services or labour. However, it would also capture a huge range of cross-border data flows that would not normally be considered ‘trade’ such as personal
communications. Other technical shortcomings include the likely overestimation of traffic as Internet hubs route data across multiple borders to connect two endpoints (Lund and Manyika, 2016).

National statistics offices, which measure imports and exports, are also struggling to adequately capture data on digital trade. For instance, a consumer directly buying a low-value item from an e-commerce platform overseas, who then receives the good by parcel service is often not taxed and the transaction may go unrecorded. Purchases of cross-border digital services can be equally hard to measure. (China has just raised taxes on imported products bought via e-Commerce platforms. As of April 2016, goods sent directly to consumers will now be treated as imports and will be subject to tariffs and value-added and consumption taxes, whose rates vary depending on the type and value of goods (Wall St Journal, 2016). In contrast, the United States has just raised its de minimis rate for goods imported by mail at from $200 to $800). Similarly, when overseas freelancers are hired via digital platforms, workers are often not paid directly and as the sums that workers received from each employer are small they can often go unreported in the national income tax system.

Barriers to digital trade in Asia-Pacific developing economies

The ability to deliver digital products to global markets, or buy and sell through online marketplaces, can help developing countries overcome traditionally high trade costs arising from limited transport infrastructure, slow customs procedures and geographic distance from large consumer markets. Asia-Pacific developing economies are already selling services in software, medical diagnostics and accountancy. Traditional physical goods like handicrafts or furniture can also now reach a global market of consumers.

Digital trade can also be a force for inclusive growth as small- and medium-enterprises (SMEs), and those led by women and other vulnerable groups, are able to integrate themselves into the global market more easily. This is especially beneficial in Asia and the Pacific where SMEs are a high share of total enterprises. Indeed, women may be well-placed to benefit from the types of flexibilities—such as home working—that digital trade facilitates (ADB, 2015). Online outsourcing sites are generating new employment opportunities. For instance, outsourcing site Elance.com has over 350,000 freelancers in India, who earned over $160 million in 2012. Services demanded through these sites range from those requiring only basic skills, such as data entry, to more specialized services such as computer programming (ADB, 2014).

Countries with the right digital infrastructure and regulations in place will gain the most out of the new digital age, with positive impacts in their economic and social development. However, challenges still remain. Physical connectivity through communications infrastructure remains important but infrastructure investments for information and telecommunications technologies growth are prohibitively expensive for many countries, especially for those in the developing world. Landlocked countries without access to submarine cable landing points often lack fast Internet access. In South-East Asia, the percentage of households with Internet access ranged from 86 per cent in Singapore to 5.1 per cent in Lao PDR and only 2.2 per cent in Myanmar in 2014. Similarly, consumers and businesses pay more in some countries than others. Consumers in economies enjoying better submarine cable connectivity, such as Singapore, benefit from competitive prices at less than $10 per Mbps, while prices in less connected countries such as Cambodia, Lao PDR and Myanmar can range up to $100 per Mbps (ESCAP, 2016).

For digital trade to prosper, however, affordable internet access and physical connectivity alone are not enough: policies and regulations that support the process of buying, paying and delivering digital products are also needed. Meltzer (2016) identifies three elements of an enabling environment for
digital trade namely: (i) elements needed to give businesses and consumers confidence to use the internet to make cross-border transactions; (ii) regulations determining the type of information that is available online and the ability to transfer data across borders; and (iii) regulatory cooperation to address the externalities of digital trade and the incentives this creates to restrict cross-border data flows. Successful execution requires finding the right balance between regulation and openness and often involves difficult trade-offs, for instance between security and the gains from openness (figure 1).

Figure 1. Elements of an enabling environment for digital trade

Measured against these benchmarks progress is mixed across Asia-Pacific developing countries. The economic and political costs of establishing an effective framework for digital trade represents a major barrier for many countries. While consumers are increasingly gaining confidence in using online platforms, access to secure digital identities remains difficult in some markets. An estimated 73 per cent of economies in the region have e-transaction laws already adopted, though only 38 per cent have adopted laws on consumer protection and 29 per cent on privacy. Similarly, cybercrime laws are in place in only 56 per cent of regional economies—well below the 97 per cent adoption rate in developed economies (ADB, 2015).

The ability to make and receive cross-border payments for online goods and services is a particular challenge in many developing countries and even between some advanced economies. In countries like India many domestic e-commerce transactions are cash-on-delivery—a payment method that will not work for cross-border sales. Further, international payment services companies, such as PayPal, do not operate in certain jurisdictions. While innovation in financial services, such as in mobile banking, has greatly expanded the provision of banking to many individuals, entrepreneurs and SMEs in developing countries, cross-border interoperability is a challenge. For instance, a mobile payments platform that is tied to a particular national carrier network will not be useful if a buyer in another country that is not a subscriber to the seller’s telecom network is not able to remit the payment (Biljani and Gupta, 2013).

Likewise, for both businesses and individuals, digital identities are playing an increasingly important role in facilitating the use of financial services. The global shift towards digital financial services has lowered costs and allowed for increased security, benefitting traditional and non-traditional financing platforms alike. Digital finance is one of the fastest-growing and most disruptive industries in the world and it is positioned to help close the worldwide financial inclusion gap. Access to digital payments will enable people to engage in domestic and global trade more efficiently. The benefits of this efficiency gain will promote development in other financial arenas, such as savings and remittances. Compared with those from countries with robust information-technology infrastructure, entrepreneurs and internet users from emerging economies frequently face trust challenges when dealing with clients and service providers.
providers over the internet. A universally available secure digital identity, especially one that incorporates biometric data, can help address the financial inclusion gap by allowing everyone to establish and prove their identity online.

**The e-Residency Programme: overcoming hurdles to digital trade**

The importance of digital trade is increasingly recognized by Asia-Pacific developing economies. Nevertheless, some countries continue to lag behind the regional leaders in the development of enabling conditions that facilitate digital trade. In these cases, innovations such as the development of ‘e-Residency’ may help individuals and businesses to take advantage of the opportunities of digital trade. Just as companies sell their services across national boundaries, we may be entering an era in which governments too, begin to selectively make the benefits of citizenship, in terms of access to digital services and secure digital identities, available to non-residents.

The Republic of Estonia, an EU Member State, is the first country to offer e-Residency—a transnational digital identity potentially available to everyone in the world. By enabling secure digital transactions and facilitating access to the EU market, e-Residency provides the opportunity to any individual, entrepreneur or company to more easily participate in global trade, regardless of their place of residence or where they were born.

Estonia has invested significantly to become recognised as a leader in the digital provision of services. Citizens can, for instance, go online to vote, pay taxes, check health records, or register births (Guardian, 2014; Financial Times, 2015). This system rests on high standards of privacy and security. E-Residency uses that same infrastructure to offer the rest of the world a subset of the services provided to Estonian citizens. The programme then allows the cross-border provision of information and services electronically by granting the ability to use Estonia’s digital platform. This then makes possible a wide variety of potential digital trade transactions.

Specifically, for individuals or businesses based overseas, once they obtain an e-Residency card and the digital identity it provides (following the process described in the Annex) the following services are available:

- Establish an EU business online which can be administered independent of location
- Digitally sign, authenticate, and encrypt documents and contracts
- Open an Estonian bank account and conduct e-banking
- Access international payment service providers

E-Residency thus offers the opportunity to establish and run a location-independent international business in Estonia. Estonia has been ranked highly for its transparent and competitive business environment and was placed sixth among European Union economies by the World Bank for the ease of doing business (World Bank, 2016) and could prove an attractive location for registering as a business for firms in developing markets (box 2). Particular benefits may include:

**(i) Secure digital identities** - The programme provides a platform that effectively identifies the user of the computer and confirms their identity. Applicants for e-Residency undergo a background check, submit biometrics, and meet face-to-face with an Estonian official before obtaining the e-Residency digital ID. It also offers strong privacy protection, reinforcing trust in the internet as a place to do business and manage personal data. Relying on Estonia’s digital infrastructure can help overcome the

1 By the end of 2016, it may be possible for bank accounts to be opened remotely, at the discretion of the bank. At present, it requires at least one face-to-face meeting.

2 Ownership and control of the company remains fully with its founders regardless of their place of residence and without the need to have Estonian shareholders.
suspicion and privacy concerns that might deter transactions if the buyer or seller is based in a country without a strong framework for regulating digital trade.

(ii) Access to the European Digital Single Market – The European Union is creating a European Digital Single Market. To support this, the regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) adopted in 2014 aims to enable secure and seamless electronic interactions between businesses, citizens and public authorities. In this regard, the eIDAS Regulation ensures that: (a) people and businesses can use their own national electronic identification schemes (eIDs) to access public services in other EU countries; and (b) creates an European internal market for eTS - namely electronic signatures, electronic seals, time stamp, electronic delivery service and website authentication - by ensuring that they will work across borders and have the same legal status as traditional paper based processes (European Commission, 2015). E-residency thus offers a gateway to the technical interoperability and legal standardisation of eIDAS. The users of the ID card can be fully trusted with the use of their digital identity within the EU. After the eIDAS Regulation—on the mutual recognition of electronic identification and trust services in the EU—goes into full implementation by 2018, Estonian e-residents will have access to the same secure and trusted online services as other EU citizens. This means that the digital identity provided by e-Residency will be recognized by Member States of the EU, and its digital signature will be legally binding, thus facilitating transactions with the European market, the creation of companies across Europe, and doing business with international partners as they too become digitised. It is important to note that documents signed digitally using e-Residency can be verified as authentic and unmodified, hence protecting them from edits, modifications or revisions other than those authorised by the issuer.

In the Asia-Pacific region, exports of other commercial services\(^3\) increased by more than twofold between 2005 and 2014, from $235 billion to $630 billion (ESCAP, 2015). This category comprises many areas in which e-Residency type schemes could facilitate cross-border trade such as *Telecommunications, computer and information services*. However, EU online services consumption is still very heavily based on services produced in the EU or US (figure 2). E-Residency could be one channel through which firms and individuals in Asia diversify their trade in services - giving them the capacity to enter the EU digital and physical services market and keep transaction costs at a minimum.

![Figure 2. Online services consumption in the EU by place of origin, 2015](image)

Source: *International Trade in Online Services*, European Commission, 2015

(iii) A Marketplace for e-Residents - In terms of future benefits, the e-Residency platform could incorporate additional services when needed. Service providers from a variety of industries are able to

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\(^3\) The category is composed of: Other business services; Telecommunications, computer and information services; Financial services; Charges for the use of intellectual property n.i.e.; Construction; Insurance and pension services; and Personal, cultural, and recreational services.
offer their services and products to the e-Residency network, creating an ‘app economy.’ e-Residency’s recent partnership with Nasdaq to allow e-residents to participate and vote electronically in the shareholder meetings of companies listed on the Tallinn Stock Exchange, is an example of reducing transaction costs using e-residency.

Box 2: Overseas firms using e-Residency

As of February 2016, 393 companies have been established using e-Residency and 827 are owned by e-residents. For instance, a Palestinian hardware start-up found accelerators in Estonia to help it develop and scale its mobile charging product. Their eventual digital relocation to Estonia—facilitated by e-Residency—sought to overcome infrastructure and legal challenges in their place of origin. Because of their success, they have now won international entrepreneurship competitions and continue to expand globally. Another example is Limo4, a Serbian company that used e-Residency to accept money from payment providers previously not available in Serbia, allowing it to increase its client base and optimize its payment process. The company operates in various European countries.

Source: Estonian E-Residency Programme

The benefits of participating in digital trade can extend beyond firms in areas like e-commerce and payment startups—businesses in the manufacturing sector and in more traditional services can also make use of e-residency-type services. From a trade facilitation point of view, e-Residency promotes paperless trade by providing a transnational digital identity with the ability to digitally sign, encrypt, and verify documents online, thus optimizing internal processes and supply chains for businesses, trade providers and other partners—at least in those markets where these are accepted. Benefits may also extend to governments in the form of enhanced tax revenues: citizens who belong to the e-Residency programme and who were previously unable to create a company or pay taxes on their businesses abroad will have the capacity to do so in a transparent manner.

Conclusion: advancing digital trade integration

Policies that support digital trade can play an important role in delivering inclusive and sustainable growth. Increasingly, policymakers will need to make sure that they are as attentive to facilitating ‘digital’ trade as they are to ‘traditional’ trade—and the boundaries between the two will continue to blur. Where countries are falling behind in providing effective physical communications infrastructure and an enabling regulatory environment, firms and individuals may still be able to benefit from the opportunities of digital trade by utilising an ‘outsourced’ regulatory framework from other governments which are able to provide an effective platform. The Estonian experiment with e-residency is an early example of this and deserves close attention.
Annex: Process to apply and obtain Estonian e-residency

1 To apply, a person must submit an online application form at [e-resident.gov.ee](http://e-resident.gov.ee), the completion of which requires a national identity document (usually a passport).

2 The Police and Border Guard Board performs a thorough background check, confirming that the applicant is not listed in any international felony databases. This information is reconfirmed annually.

3 If the person is approved to become an e-resident, he or she is asked to attend a face-to-face meeting with an Estonian official to pick up the card and to provide fingerprints. The meeting can take place at an Estonian Police and Border Guard Board station, at one of Estonia’s thirty-eight foreign embassies and consulates, or at one of the 200 visa centres located all over the world.

4 During the meeting, the person’s biometrics are collected and the identity document that was previously submitted in the online application is reviewed in its physical form. This process ensures that the certificates given to the e-resident will prove their identity every time they use their digital ID on the Internet.

5 The person receives a physical card with his or her verified name and unique ID code for identification, and two PIN codes—one for digital authentication and another one for digital signing, verifying and encrypting documents. The Government of Estonia provides free software (DigiDoc3) that uses strong encryption that relies on the certificates stored on the physical ID card to perform these activities.

6 Please note that the visa centres will launch in 2016. The average processing time to obtain an e-Residency is one month, and the application state fee is 100 euros. E-Residency does not confer citizenship or tax residency and does not confer the right to live in or visit Estonia or the European Union.
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