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DIGITAL MONEY: A JOURNEY WORTH TAKING

Digital money delivers benefits for all stakeholders. But are countries doing enough to drive digital money readiness? And what can the world learn from the countries leading the digital charge? Citi and Imperial College London's Digital Money Index provides the answers.

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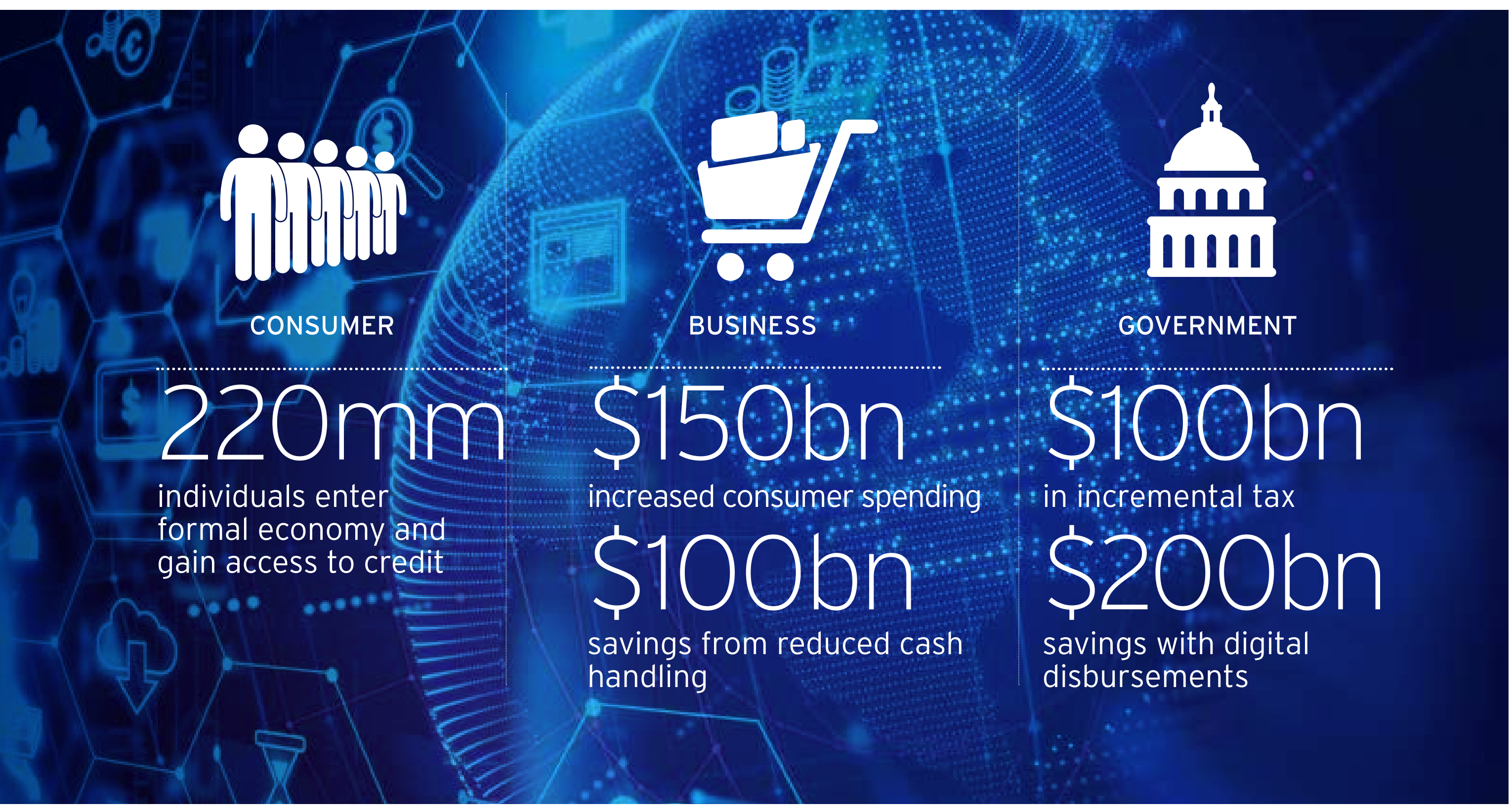
Introduction

The world is changing fast, driven by the forces of globalization, urbanization and digitization. The world's largest 300 metropolitan economies already generate around 50% of global output[1]; cross-border flows account for 10% or $8.8 trillion of the world economy[2] and there are now more than 20 billion[3] connected devices (including internet of things devices); and last year global web sales neared $3 trillion[4]

Digital money is one common enabler for these changes. It facilitates smart cities. Half of all London pay-as-you-go subway and rail rides are paid with contactless cards[5]; the Singapore transit authority plans to phase out cash by 2020. In 2018, approximately $225 billion of personal remittances were delivered digitally[6]. Connected commerce has already reached approximately $25 billion in value with all of these payments driven by embedded wallets.[7]

Digital money benefits all stakeholders. Citi research shows that a 10% increase in digital money adoption by countries within the index would facilitate access to formal financial services and cheaper credit for 220 million individuals. That would deliver a $150 billion lift in consumer spending, which raises businesses' revenues, while digital payments also cuts cash handling costs for businesses by $100 billion. Meanwhile, governments pocket $100 billion more in taxes and savings of $200 billion by digitizing disbursements. In total, up to $1 trillion of new flows would enter the formal economy.[8]



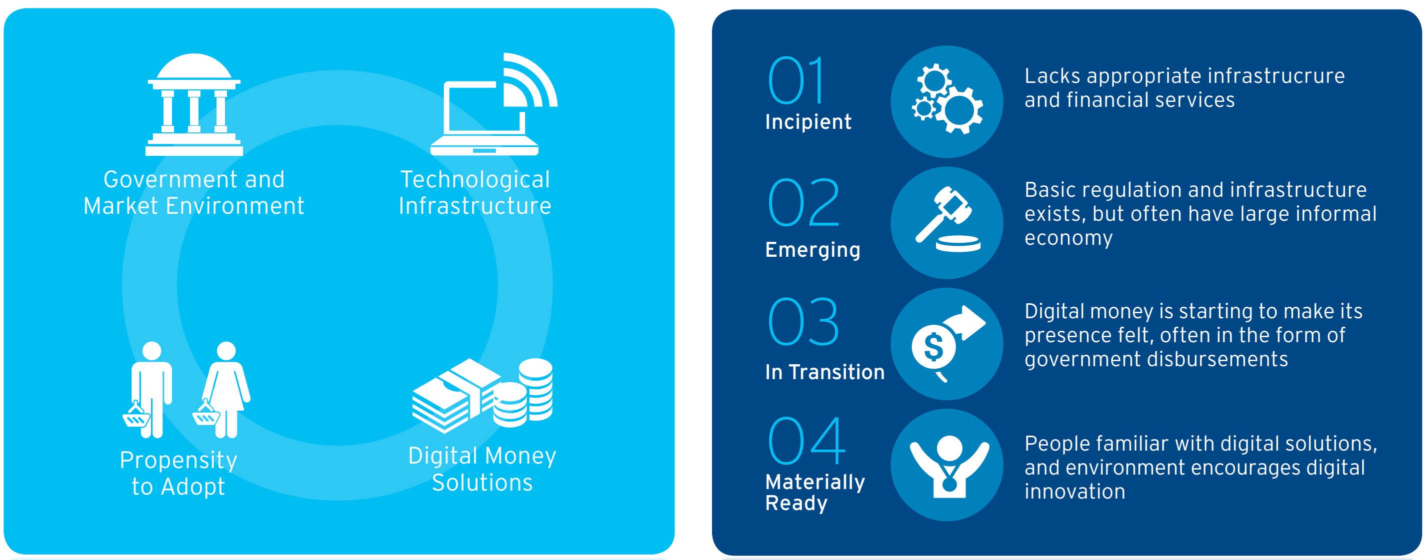
Insights from the Digital Money Index

Citi, in partnership with Imperial College London, launched the Digital Money Index six years ago to track the development of digital money readiness. The 84 countries tracked by the Digital Money Index have made significant progress in their digital money journey, with a 5.5% improvement in overall digital money readiness over the last five years.

Diagram 1

4 PILLARS CONSTITUTE THE INDEX...

ALIGNING COUNTRIES INTO 4 CLUSTERS...



The Index groups countries into four clusters of digital money readiness – incipient, emerging, in-transition and materially ready (see diagram 1). Improvements can be seen for each cluster over the past five years, although progress is not even. Incipient and in-transition countries have experienced a higher than average increase in their readiness, while emerging and materially ready countries demonstrate below average progress in their readiness. Rapid progress by incipient countries is explained by their low starting base.

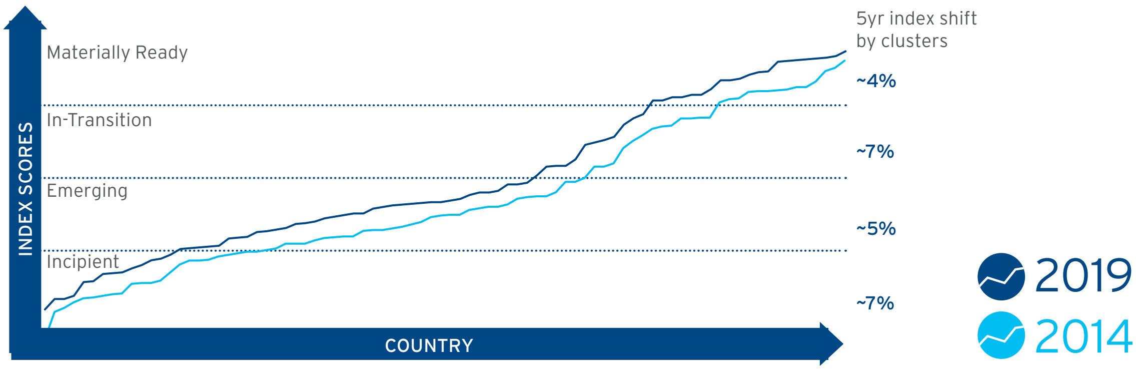
Countries at an earlier stage of readiness typically face challenges relating to lack of financial and communications infrastructure and access to basic financial services. Those that are more mature face challenges relating to availability and adoption of digital money solutions.

While countries in the emerging cluster are likely to have solved infrastructure and access challenges, they often face challenges relating to the availability of appropriate digital money solutions, which explains their below average performance. In-transition countries are making good progress in introducing relevant digital money solutions and gaining support from appropriate stakeholders to drive adoption.

Digital money is distinct from crypto currency. Digital money refered here is the migration from cash and checks to credit/debit cards, stored value instruments and other non-paper based mechanisms

5.5%

Index movement over the past 5 years

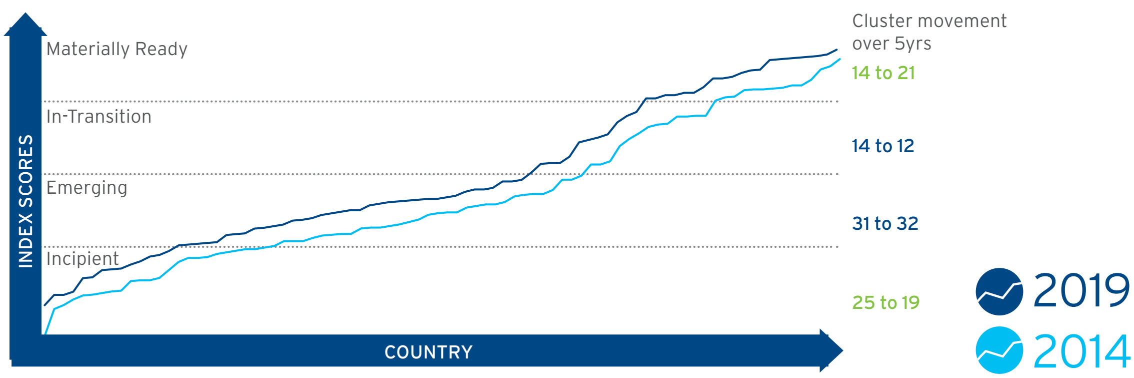


Source: Citi - Imperial Digital Money Index

Countries are moving up the clusters

Of the total number of countries in the Index, 20% have advanced from one cluster to another in the past five years – moving from incipient to emerging, for example – reflecting the increase in digital readiness. These 18 countries are evenly distributed; six countries progressed from incipient to emerging; five countries from emerging to in-transition; and seven from in-transition to materially ready.

Countries that have advanced from one cluster to another have typically done so by overcoming bottlenecks associated with their respective clusters and peers.



Source: Citi - Imperial Digital Money Index

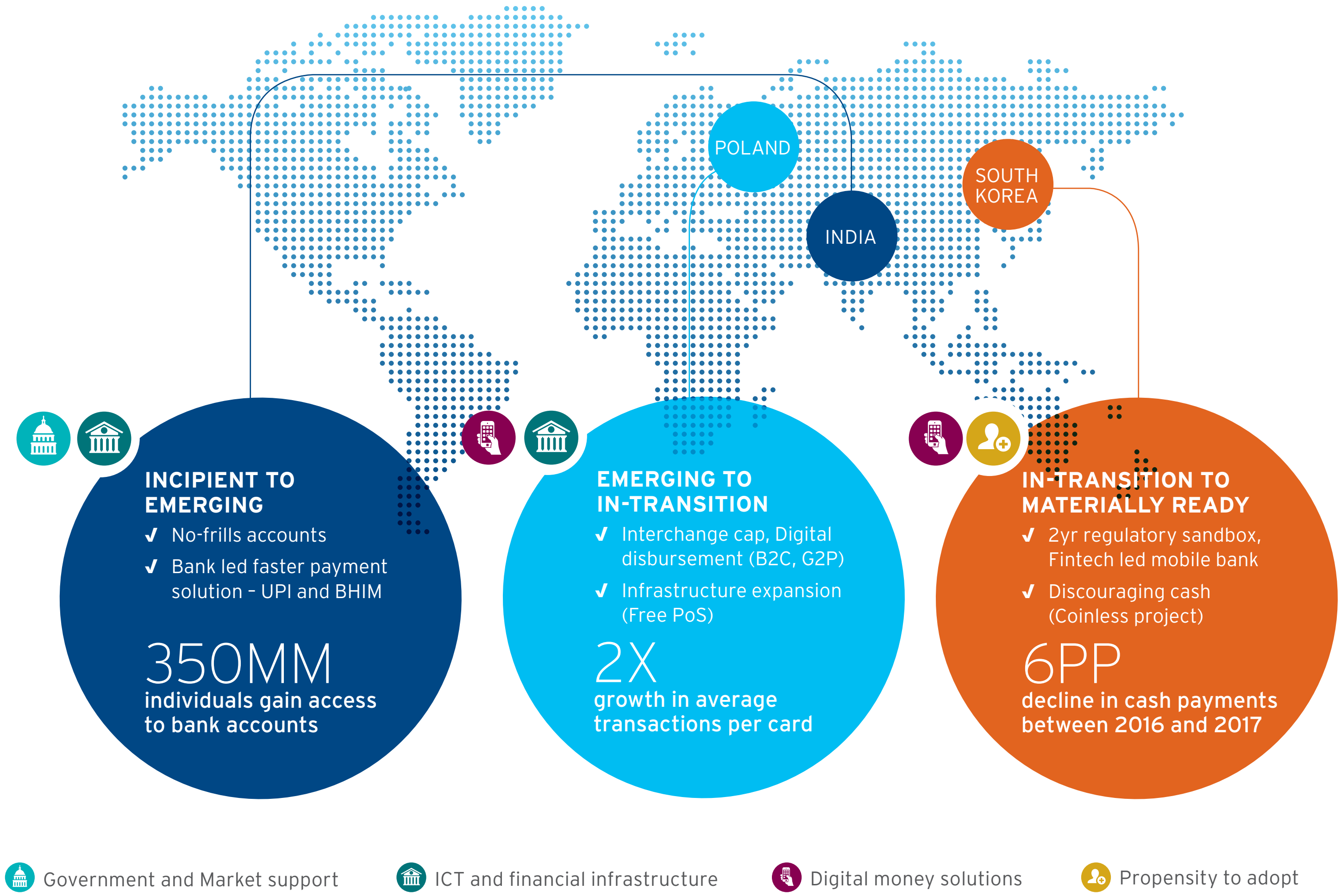
Explaining incipient to emerging advances

Lack of infrastructure and lack of access to financial services are the biggest bottlenecks faced by countries in the incipient cluster. The six countries that advanced to enter the emerging cluster have addressed these challenges. India is exemplary in this respect.

India's movement from incipient to emerging is driven by the government's decision to launch a no-frills bank account (Jan Dhan) - 350 million accounts have now been opened[9]. The government has also enabled fintech-led digital solutions and facilitated development of low-cost solutions such as the BHIM mobile payment app and the UPI real-time payment system.

What drives emerging to in-transition advances?

Countries in emerging clusters have basic access to traditional financial services infrastructure, but face challenges in creating and strengthening their digital money infrastructure and building momentum behind digital money solutions. The five countries that advanced from emerging to in-transition have managed to confront these challenges. Poland provides a great example.



The Polish government encouraged businesses to open bank accounts for employees to pay salaries directly into bank accounts, while focusing on using electronic modes of payment to distribute pension and other retirement benefits.[10] The Government also distributed point-of-sale terminals to SMEs to drive adoption of digital payments[11]. In addition, Government also reduced interchange on debit cards to 0.2% and 0.3% on other cards[10]. As a result of these initiatives, Poland witnessed 2X growth in average transaction per card between 2014 and 2017.[12]

Making the leap from in-transition to materially ready

Unlike the other two clusters, countries in the top clusters face challenges primarily in encouraging consumers and businesses to adopt digital money. The seven in-transition countries that advanced to the top cluster have tried to address adoption challenges with innovative interventions. But adoption will continue to pose a challenge for all countries. South Korea can perhaps provide a model given its successful interventions.

South Korea, where digital payments were already high due to tax incentives for digital payments, concentrated its efforts on ensuring availability of innovative digital solutions and driving adoption of digital money solutions. Initiatives such as the 'coinless' project which focused on driving consumer adoption of digital payments, enabling of FinTech led mobile-only banks and sandboxes for developing and testing innovative solutions with an exemption from regulatory scrutiny for two years drove

availability of solutions. These initiatives have successfully driven a 6-percentage point decline in cash payments between 2016 and 2017.[13]

Digital money delivers results

The benefits of digital money have long been apparent and well-articulated by key influencers. Increasingly there is clear evidence that countries are recognizing the potential gains offered by digital money.

Mexico, for example, has digitized social transfers and embarked on a Digital Mexico program to further support its transition to a digital economy. Today more than half of social transfer recipients receive benefits digitally, and the government of Mexico is saving around $1.3 billion a year as a result.[14] Extrapolating this for all the countries in the Index that have deployed similar initiatives to digitize social transfers, Citi estimates savings from digital disbursements of almost $70 billion a year.[15]

Elsewhere, Kenyans have enjoyed an increase in personal consumption with rise of digital money solutions. Mobile money users in Kenya save almost $150 million a year due to reduced cash handling costs, easy access to credit and accrued interest from depositing excess cash with their mobile financial service provider.[16] Extrapolating this for all the countries in the Index, Citi estimates that digital money solutions enable consumers to save close to $90 billion every year[17], which is then available for spending and helps to drive economic growth.

Taking a proactive approach

Given the clear benefits from digital money, countries need to become more assertive and hands-on in driving digital money readiness. The Index reveals several countries well poised to advance clusters in the coming years, on the back of a comprehensive approach to digital money readiness. Their strategies inform the following guidelines for success:

Develop a holistic approach: The regulatory environment, enabling infrastructure, solution provisioning, and consumer and business adoption are all equally important to building a strong digital money environment.

Address typical bottlenecks: Digital money readiness is a journey. Once the basic infrastructure and access issues are solved, countries need to continuously focus on strengthening and expanding digital money infrastructure, ensure availability of relevant solutions and intervene at appropriate times to drive adoption.

Provide incentives for consumers and businesses alike: Consumers and businesses both need to be weaned from traditional paper money. Successful case studies demonstrate the effectiveness of tax incentives in driving business adoption while tools such as cashback hold promise in driving consumer use, especially in low-income groups.

Take advantage of technology drivers: Emerging digital ecosystems are underpinned by digital money and hold tremendous sway over consumer behavior. As mobility/ride sharing and ecommerce ecosystems demonstrate, consumers can be influenced to transact digitally with the right use case and user experience. Providing an enabling atmosphere for these digital ecosystems to thrive will go a long way in driving consumer adoption of digital money.

Footnotes

1 https://www.brookings.edu/research/global-metro-monitor-2018/

2 https://unctad.org/meetings/en/Presentation/tdb65pt2_item5_presentation_LKrstic_en.pdf

3 https://www.statista.com/statistics/471264/iot-number-of-connected-devicesworldwide/

4 https://www.digitalcommerce360.com/article/global-ecommerce-sales/

5 https://tfl.gov.uk/info-for/media/press-releases/2018/april/half-of-all-tube-and-rail-pay-as-you-go-journeys-across-london-using-contactless

6 https://www.businessinsider.com/the-digital-remittances-report-2018-12?r=US&IR=T

7 https://which-50.com/vehicle-based-payments-to-propel-financial-iot-to-410-billion-in-transactions-by-2023/

8 Citi Research - Based on regression of the Citi-Imperial Digital Money Index against GNI. Estimate based on a 10% increase in digital money readiness and commensurate increase in adoption

9 https://www.pmjdy.gov.in/account

10 https://markets.businessinsider.com/news/stocks/payments-in-poland-2017-what-consumers-want-1012142641

11 https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=fda1d6fa-e429-447e-be90-c868ec42bbe7

12 https://www.businesswire.com/news/home/20181112005338/en/Payments-Poland-2018---Total-Number-Payments

13 https://en.yna.co.kr/view/AEN20181011013200320

14 https://www.betterthancash.org/news/blogs-stories/digitization-of-payments-in-mexico-saves-billions

15 Citi research and estimates

16 http://www.rich.co.ke/media/docs/True%20Value%20Booklet_Mail.pdf

17 Citi research and estimates

Appendix: 2019 Index Results

Digital Money Index

Rank	Country	Change in rank from 2014	Government and Market Support	Technology and Financial Infrastructure	Digital Money Solutions	Propensity to adopt	Cluster
1	Finland	0	5	2	5	6	Materially Ready
2	Sweden	0	12	8	6	2	Materially Ready
3	Norway	0	16	11	1	3	Materially Ready
4	United States	6	4	5	12	4	Materially Ready
5	United Kingdom	0	11	10	2	5	Materially Ready
6	Singapore	3	1	3	4	16	Materially Ready
7	Switzerland	-1	2	4	17	8	Materially Ready
8	Netherlands	-4	6	14	15	1	Materially Ready
9	Denmark	-2	17	7	9	7	Materially Ready
10	New Zealand	1	8	16	7	11	Materially Ready
11	Germany	2	7	9	18	9	Materially Ready
12	Canada	2	18	15	3	10	Materially Ready
13	Hong Kong	-5	3	1	22	23	Materially Ready
14	Japan	1	10	12	10	21	Materially Ready
15	United Arab Emirates	4	9	24	16	14	Materially Ready
16	Australia	-4	22	13	14	17	Materially Ready
17	Belgium	0	20	17	19	12	Materially Ready
18	Austria	-2	21	6	21	19	Materially Ready
19	Korea, Republic of	2	25	18	8	15	Materially Ready
20	Ireland	-2	13	27	13	18	Materially Ready
21	Israel	2	19	20	20	13	Materially Ready
22	France	0	23	21	23	20	In-transition
23	Malaysia	1	14	25	25	25	In-transition
24	Qatar	-4	15	38	26	24	In-transition
25	Czech Republic	2	28	19	32	22	In-transition
26	Spain	0	31	22	28	28	In-transition
27	Portugal	-2	30	28	24	27	In-transition
28	Slovenia	0	32	33	27	26	In-transition
29	Saudi Arabia	1	24	41	30	31	In-transition
30	Italy	7	39	32	31	29	In-transition
31	China	7	29	42	29	33	In-transition
32	Chile	-3	34	23	38	30	In-transition
33	Poland	2	42	26	40	32	In-transition
34	Thailand	10	38	29	47	36	Emerging
35	Turkey	-4	55	35	33	35	Emerging
36	Costa Rica	-4	36	31	48	34	Emerging
37	Panama	-3	37	30	54	39	Emerging
38	Hungary	-2	47	34	44	41	Emerging
39	Indonesia	7	27	40	60	38	Emerging
40	Russian Federation	7	63	44	35	37	Emerging
41	Croatia	-8	72	36	36	44	Emerging
42	Kuwait	-2	54	53	41	43	Emerging

Note: In this year's index, we have made some progressive improvements with the quality of the underlying data sources and underlying methodology, which results in slight adjustments to the relative rankings of countries in the index. We have carried forward the changes to the previous year's index as well to enable a true comparison

Materially ready In-Transition Emerging Incipient

Rank	Country	Change in rank from 2014	Government and Market Support	Technology and Financial Infrastructure	Digital Money Solutions	Propensity to adopt	Cluster
43	South Africa	-4	33	50	61	40	Emerging
44	Trinidad and Tobago	-3	51	39	42	51	Emerging
45	Sri Lanka	0	46	59	34	57	Emerging
46	Kenya	3	35	56	52	42	Emerging
47	Iran, Islamic Republic of	16	80	70	11	68	Emerging
48	Kazakhstan	-6	57	51	39	53	Emerging
49	Jamaica	-1	44	37	55	52	Emerging
50	Mongolia	6	68	46	37	48	Emerging
51	Brazil	-8	69	47	45	47	Emerging
52	Namibia	1	41	58	49	58	Emerging
53	Romania	-3	48	55	51	50	Emerging
54	India	7	26	43	62	73	Emerging
55	Greece	-4	60	66	43	54	Emerging
56	Mexico	-2	62	45	59	55	Emerging
57	Colombia	-2	66	49	50	60	Emerging
58	Ukraine	6	79	64	46	46	Emerging
59	Morocco	-2	43	52	64	66	Emerging
60	Philippines	-8	58	73	65	45	Emerging
61	Viet Nam	7	59	62	63	56	Emerging
62	Guatemala	-4	52	54	78	49	Emerging
63	Botswana	-1	40	65	67	69	Emerging
64	Dominican Republic	-5	71	63	58	62	Emerging
65	Peru	0	64	48	68	67	Emerging
66	Tunisia	3	56	67	66	72	Incipient
67	Honduras	3	81	60	73	59	Incipient
68	Egypt	6	65	57	72	71	Incipient
69	Ghana	-3	49	68	70	74	Incipient
70	Argentina	2	82	69	56	61	Incipient
71	El Salvador	-11	78	61	75	65	Incipient
72	Bangladesh	4	70	74	53	80	Incipient
73	Senegal	-2	50	81	74	63	Incipient
74	Pakistan	1	61	71	79	78	Incipient
75	Nigeria	-2	73	75	77	75	Incipient
76	Algeria	2	76	78	82	64	Incipient
77	Zambia	-10	67	79	69	77	Incipient
78	Cameroon	1	45	83	76	76	Incipient
79	Tanzania, United Republic of	1	74	76	80	79	Incipient
80	Nepal	2	77	77	71	82	Incipient
81	Venezuela, Bolivarian Republic of	-4	84	72	57	70	Incipient
82	Mali	1	53	84	83	83	Incipient
83	Mozambique	-2	83	80	81	81	Incipient
84	Ethiopia	0	75	82	84	84	Incipient

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