

**Copy India, Paste in Panama: A roadmap to effective financial inclusion via a digital & cashless evolution.**

By

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# **Copy India, Paste in Panama: A roadmap to effective financial inclusion via a digital & cashless evolution.**

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**Jorge Arbesú-Cardona**

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## **ABSTRACT**

What benefits can technology bring to the finance industry? Can it disrupt the oldest medium of exchange in the world, physical currency? If it can, are there any benefits to it, and most importantly, how would you do it? Our research aims to answer those questions. It looks at various sources that have spent a significant amount of time explaining why transitioning from a cash-dependent market into a cash-lite market is beneficial. Furthermore, it builds on these concepts and looks at the largest ever attempt at this transition and examines the benefits, and challenges it has faced. We deep dive into the Indian demonetization experiment.

Most importantly our research draws five-key insights for how India is making this transition, and later we use those insights as a framework to examine a different market, Panama and draw a clear set of recommendations for that country to make such a transition. The framework, however, is to be utilized as a lens for which any market can be analyzed, and such a transition can be made.

**Thesis Supervisor:** Simon Johnson

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## **Dedication.**

To my everything, my mother, Maribel Cardona. For teaching me every important thing I know, but especially for teaching me to dream.

To my wife, Nicole and my boy Bob – for your unconditional support, love and dedication. For your smiles.

To my brother, Alberto for carrying the weight of life for both of us when I was too young to do so.

To the greatest mentor, guide and role model life could have ever given me, Juan Cardona.

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To building parallel universes. To being made out of stardust.

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“... The key challenge for Panama is to identify what drivers of growth will take over as the spearheads of the economy once the current boom subsides” (Hausmann, Santos, & Morales, 2016)<sup>1</sup>

## I. Introduction and Summary

This paper aims to explore one of those drivers of growth Hausmann, and his team refer to, that driver is Financial Inclusion through digital transformation. Financial inclusion is critical, as increasing the poor’s access to financial services is often considered as an effective tool that can help reduce poverty and lower income inequality (Park & Mercado, 2015)<sup>2</sup>. Panama lags in these areas. As of 2015 only 43% of Panamanians<sup>3</sup> had access to a bank account one of the measures of Financial Inclusion, this pales in comparison to regional leaders such as Chile (63%), Costa Rica (64%) and Brazil (68%) and significantly behind world leaders like Singapore (96%), Estonia (97%) and Sweden (99%). When evaluating Panama’s income distribution, another driver Financial Inclusion addresses, the country has even more work to do; by 2012 the GINI coefficient in Panama was 0.52, the fourth highest in the world<sup>4</sup> (Hausmann, Morales, Santos. 2016). For Panama to guarantee its long-term prosperity, financial inclusion must continue to be an integral part of the country’s long-term strategic plan, but it also has to execute this strategy through more tangible and useful tactics. Financial Inclusion can help improve both indicators by providing the previously excluded population with access to financial products.

The obvious question then becomes, how can financial inclusion be achieved? The answer to that question is multifaceted. There are various approaches to achieving financial inclusion; however, the focus

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<sup>1</sup> Hausmann, Santos, Morales, Center for International Development, “Panama Beyond the Canal”, 2

<sup>2</sup> Park, Mercado, “Financial Inclusion, Poverty, and Income Inequality in Developing Asia, 1

<sup>3</sup> The World Bank, GINI Index <https://data.worldbank.org/indicator/SI.POV.GINI?end=2015&locations=PA-CR-NI-GT-HN-SV-CO-SG&start=1979&view=chart>

of this paper will be on the one path that can help leapfrog many of the initial stages of driving significant financial inclusion. The proposed approach is the digitization of financial services, specifically the payments industry in all of its aspects, in other words, the evolution of a cash-dependent society to a cash-lite society through mobile accounts and digital payments. At the end of this paper there will be a definite roadmap for how Panama, a country in Central America with a population of roughly 4 million<sup>4</sup> that have doubled its income per capita over the last decade, can leverage its infrastructure, geographical positioning, and influence to:

- a) assess their readiness to transition into a digital, cash-lite economy;
- b) follow a defined set of insight-driven strategic recommendations to enable a digital payment and digital banking industry;
- c) leverage financial digitization to improve consumers financial health and drive financial inclusion;

This paper will not try to justify the benefits of financial inclusion, nor try to define it, it is built on the understanding that financial inclusion is mostly beneficial for an economy and its markets. What this paper aims to provide is a clear path of how Panama can accelerate inclusion by evolving into a cash-lite, digital economy.

First, a case is made to why there should be an evolution of cash to cash-lite or as it is popularly referred to in some areas, for demonetization – we built this argument on three main blocks, benefits to the consumer, benefits for the government, and benefits for the private sector. Second, the current

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<sup>4</sup> The World Bank, Population Total, Panama. <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=PA>

evolution of another country's path from cash to cash-lite will be presented to have a benchmark of compelling and overarching set of activities and initiatives required to successfully and efficiently ignite this evolution. This benchmark country will also serve as a training site for lessons learned. The criteria for selecting this other country is simple: to find a place that has very recently made its mission to financially include large parts of their population through mobile accounts and digital payments. Based on this criterion, India will be used as a learning/training site to map out the early effects and pitfalls of this evolution.

On November 8<sup>th</sup>, 2016 India's Prime Minister Narendra Modi announced the immediate implementation of the demonetization policy in which the government efficiently invalidated 500-rupee and 1,000-rupee banknotes (worth approximately \$7.50 and \$15 respectively) overnight, making India the most massive demonetization experiment ever attempted. This policy relied on a set of activities and initiatives already in course such as the Economic Liberalization of 1991; Aadhaar, India's digital ID platform; NPCI (National Payments Corporation of India) a non-profit organization owned by a consortium of banks focused on moving India to a cashless society; UPI (Universal Payments Interface) an instant real-time payment system that works by instantly transferring funds between two bank accounts on a mobile platform; BBPS (Bharat Bill Pay System) a government enabled bill payment platform; AEPS (Aadhaar-Enabled Payment Services) a service that turns convenience store into banking correspondents in which people can now deposit and withdraw money into and out of their bank accounts. India has also relied on activities and initiatives that were soon to be implemented such as GST (Goods and Services Tax) which unified the tax structure nationwide and simplified tax collection (a significant benefit of phasing out cash) to be rolled out to achieve demonetizations goals. There has also been a thriving private sector

growth and a broad set of innovation activities from the telecommunications, payments, and microfinance lending industries which also play a crucial role in supporting and enabling a cashless economy. The emergence of companies like Paytm, Airtel, and MobiKwik in the mobile banking space, and the ease of access to cheap smartphones like Docoss and Mi (powered by Xaomi) are proof of these private sector innovations. These set of activities and initiatives relay one clear message: successful and disruptive financial inclusion is not the result of one independent initiative but a result of a collection of them.

The implementation of demonetization in India was so abrupt that it shocked the economy in the short run; also, this shock had significant ripple effects reaching various industries. One can argue both in favor or against this abrupt implementation however instead of studying the swift implementation this paper will study the set of initiatives that were in place to enable the implementation of such a policy. Being that demonetization was implemented more than a year ago, the effects seem to have normalized, and the country seems well in route to becoming more digital as a consequence of it. For example, GDP growth<sup>5</sup> fell to 5.7% in 2Q 2017 after closing at 7% in 4Q 2016. However, it has since picked back up to grow at a rate of 7.2% by 4Q 2017 according to the Ministry of Statistics and Program Implementation of India. According to the RBI (Reserve Bank of India), cash usage also declined as consequence of demonetization, going from representing 78% of all transactions in 2015 down to 62% in 2016. This number has since bounced back up to 72%, however with the aggressive growth of payment wallets and mobile banking; forecasts suggest cash usage will steadily decline as time passes.

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<sup>5</sup> Kala, The Wall Street Journal, India's Quarterly GDP Increases 7.2%, <https://www.wsj.com/articles/indias-quarterly-gdp-increases-7-2-1519821904>

These set of activities and initiatives in which the Indian government relied on will be the base for the proposed roadmap for Panama's evolution. There will also be a customized set of activities and initiatives specific to Panama's needs.

Third, this paper will bring forward a plan for Panama to make a similar shift. The idea of the plan will not be to impose a shock or implement an overnight initiative such as the one done in India. Instead, it will be to provide a framework to diagnose Panama's current potential to digitize and provide a set of recommendations that will, in turn, allow its citizens to capture the value such policy will create.

The recommendations made for Panama will differ widely to those executed by India. Our goal is to provide a framework to help diagnose and analyze the market. For example, in our insight titled "An all-hands-on-deck driving force", India has a non-for-profit organization leading the charge towards a cash-lite evolution, whereas Panama's driving force revolves around building an entrepreneurial ecosystem that will drive innovation and enable the evolution. To put it simple, same strategy, different tactic.

There will be an insight-driven approach to this paper, at the end of it the reader will be able to utilize our framework to accurately identify the standing a market has for going cash-lite, and to use this framework to build a set of strategic initiatives to drive the transition. The writing technique while academic will also rely on story-telling to leverage the field-work and on-field research experience, the justification for this relies on the fact that the underlying motivation for this paper is to ultimately benefit the segment of the population that has been historically at an economic disadvantage. The proposal will of course also focus on capturing significant value for the market and the business segment.



## II. The case for evolving from cash to cash-lite.

“The use of cash involves several social costs to individuals – especially the poor – as well as business and the government.” (Chakravorti, 2014)<sup>6</sup>

### **Why is it beneficial to go Cashless: From a consumers perspective**

An obvious question about financial inclusion is rarely ever addressed is, why is it that as people become wealthier, financial services become more affordable? In other words, why are financial services more expensive for the poor? Is that not counter-intuitive?

In Panama, transferring funds via online banking is mostly free of charge (some institutions charge an annual fee for unlimited transfers). However, if one of the people in the 57% of the population that does not have a savings account, wants to make a transfer of money to a city other than their own they would have to pay a fee, per transaction of 10% in some cases<sup>7</sup>. This 10% per transaction cost is driven by the absence of a savings account hence leaving consumers no option but to search for a centralized third party to perform the transaction on their behalf.

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<sup>6</sup> Chakravorti, Harvard Business Review, The Hidden Cost of Cash, <https://hbr.org/2014/06/the-hidden-costs-of-cash>

<sup>7</sup> Western Union, Send Money App, <https://www.westernunion.com/us/es/send-money/app/start>

Unbanked individuals that receive cash and transact only in cash may pay no fees to receive this cash however long transfer hours to bank branches to cash out a check, transportation costs to pay utility bills and time spent during that transportation do represent a cost of dealing in cash.

**Figure 1**

Type of Cost	Cost
Minimum Salary <sup>8</sup>	\$3.14 per hour
Metrobus Ticket Fare <sup>9</sup>	\$0.25 one way
Pay Periods in a Month	2.0
Avg. Hours Spent in Traffic to one destination <sup>10</sup>	2.5 hours per day

An elementary example can be used to illustrate these costs:

“A Panamanian construction worker in the city, for example, would spend \$0.25, twice a month in transportation to go to the bank and cash his check plus another \$0.25, once a month to transfer to a local payment collector to pay for all utilities. When accounting only for these two examples, these errands would take a combined ~ 3 hours (normalized from 2.5 hours per errand since transportation tends to be multipurpose) to

<sup>8</sup> Garrido, Capital Financiero, Asi quedo el salario minimo en Panama, por actividad económica, a partir del 2018, <https://elcapitalfinanciero.com/asi-quedo-ajuste-del-salario-minimo-panama-actividad-economica-partir-2018/>

<sup>9</sup> Arcia, La Estrella de Panama, Gobierno unifica tarifa de transporte para Metro y Metrobús, <http://laestrella.com.pa/panama/politica/gobierno-unificara-pasaje-metro-metrobus/24028155>

<sup>10</sup> Dichter & Neira, Encuesta de Opinion Publica, <https://www.tvn-2.com/2017/09/26/Resultado-sep-2017-DN.pdf?hash=0ff4ec8d47daf38c1f84785d53ddd5a230d787b7>

perform each month at a rate of \$3.14 per hour. The total cost of cashing monthly payments and paying utilities becomes then \$10.17 per month.”

Any option to handle this errands that costs below \$10.17 a month would represent significant savings for a Panamanian construction worker. Also, this does not account for other costs such as:

- **Fees.** If the construction worker uses ATM's or banking correspondents to withdraw cash.
- **Queuing time.** At the bank, ATM or payment collector.
- **Risk.** Cash is not recoverable in the case of accidental loss or theft.
- **Opportunity Costs.** Cash held in-home cannot be reinvested, it bears no interest unlike bank assets, and inflation erodes its value.

Cash then clearly represents an economic disadvantage for this construction worker when compared to another Panamanian resident. Another member of the economy will not only find a better use for the \$10.17 but can also find a better use for the 3 hours spent in transportation, the hours wasted in queues and the benefits reaped from investments and savings.

**Why is it beneficial to go Cashless:** From a government and social perspective

The costs of cash extend far beyond the individual<sup>11</sup>; cash is the preferred medium to evade tax and for those in the underground economy. The anonymity and the difficulty in tracing a transaction make it ideal to enable tax evasion and illegal activities which in turn affect those that pay taxes and that are part of the in the regular, legal economy.

Taxes are the primary source of revenue for a country, therefore the only way to increase its income, if we use business lingo, is to collect more tax. However, what happens if a country needs to increase its revenue to invest in development? Well, the most natural route would be to increase its tax rate, albeit this may have some political cost to those in office. What if instead of going that route, the tax gap (a tax that goes unpaid) could be closed?

According to Professor Ken Rogoff and his book, *The Curse of Cash*<sup>12</sup>, for 2006, the tax gap in the United States was \$450 billion or 14% of the estimated federal taxable income for that year. In Panama, for 2015 the total tax revenue accounted for \$4.9 billion<sup>13</sup>, if we were to use the US as a proxy, we could say that Panama's total tax gap is approximately \$686 million per year, to put it in other words 1.31% of Total 2015 GDP will not get paid. That amount of tax income would have been enough in 10 years to have paid for the expansion of the Panama Canal<sup>14</sup> (the project lasted from 2007 until 2017) in full, plus some

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<sup>11</sup> Chakravorti, Mazzota, *The Institute for Business in The Global Context, The Cost of Cash in Mexico.*

<sup>12</sup> Rogoff, *The Curse of Cash*, 94

<sup>13</sup> *Direccion General de Ingresos, Boletin Tributario,*

<https://dgi.mef.gob.pa/IFP/BOLETIN%20ESTADISTICO%20TRIBUTARIO%202015.pdf>

<sup>14</sup> *La Nacion, Panamá inauguró la ampliación del Canal: costó 5.450 millones de dólares,*

<https://www.lanacion.com.ar/1912822-panama-inauguro-la-ampliacion-del-canal-costo-5450-millones-de-dolares>

change. Considering that finding clear reporting on tax gaps is complicated, we had to use the U.S. reporting on tax gap as a proxy; however, this proxy might very well end up being a very low estimate. The informal economy in the U.S.<sup>15</sup> accounts for only 5% of total GDP while that number is approximately 25% for Panama<sup>16</sup>. This on top of the fact that the U.S. tax collection system for both VAT and Income tax is far more advanced than the Panamanian one.

There are also, downright criminal activities that use cash as the primary exchange medium, and Panama is undoubtedly victim to these criminal activities from both local citizens and international ones. In 2016 it was reported that Odebrecht, a Brazilian-based construction company, had paid at least \$59 million in bribes to various government officials during the periods of 2009 and 2014. The company SAP was also found guilty of bribing Panamanian officials for \$3.7 million in that period. These are some examples of bribes at a large scale that can happen in a cash-heavy economy; however, small-scale bribes such as paying off police officers or government clerks to get ahead are also an example.

**Figure 2**

Activity	Expansion
Corruption	According to the World Bank in 2001 and 2002, around 1 trillion was paid bribes globally. These bribes are paid to accelerate the largest of transaction down to small ones.
Human Trafficking, Smuggling, and Exploitation of Immigrants	According to the International Labor Organization, roughly 21 million people are victims of forced labor, of which 11.4 are women and girls. Panama is considered to be a country of transit and destination of men, women and children victims of trafficking and forced labor <sup>17</sup> .

<sup>15</sup> Nightingale, Wandner; The Urban Institute, Informal and Nonstandard Employment in the United States, 4

<sup>16</sup> Mastercard, Detail Research of the Behavior and Infrastructure of the Acquiring Market in Panama (Mastercard, 2016)

<sup>17</sup> US Embassy in Panama, Informe sobre la trata de Personas: Panama (Embassy, n.d.)

Illegal Immigration and Border control	Cash is used to deal with illegal immigration, payments made to illegal immigrants are also dealt in cash, this makes it harder for authorities to address this issue.
Terrorism	While this issue seems to be the one behind most of AML regulations, it is far from the most concerning. However, organizations like ISIS has expenditures in the rage of 1.5 billion a year.
Counterfeiting	While also small in impact, in 2001 the U.S. Treasury reported that less than 0.01% of all U.S. currency was counterfeit. Counterfeiting, however, can still be a significant issue for less developed currencies.

Source: The Curse of Cash, (Rogoff, 2017)<sup>18</sup>

Well-known cases in Panama like the “*Duro-dolares*” (Frozen Cash) case in which a government official had \$220,390 in cash hidden in various places, including their refrigerator (hence the name), is not uncommon. Few economists or policymakers, in turn, dispute that corruption is one of the most significant obstacles to development and has a significant impact on economic growth.

## Financial Inclusion.

Looking at India, we can see the benefits of having a digital approach towards financial inclusion. The country’s central bank, the RBI has permitted non-bank entities to partner with banks to provide innovative financial solutions that traditional financial institutions would be unable to on their own. For example, financial institutions are partnering with banks to provide access to mobile-payments especially for the unbanked. Furthermore, recent legislation allowed the creation of Payments Banks. These banks

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<sup>18</sup> Rogoff, The Princeton University Press, The Curse of Cash, 91 - 137

provide all of the same retail services that a traditional bank does, except for lending, however, because their model is technology based, the marginal cost of customer acquisition is close to zero.

A recent study by the Institute for Business in the Global Context titled the Cost of Cash in India stated that “as of March 2013, nearly 268,000 banking outlets have been set up in villages, compared to 67,694 in March 2010.<sup>59</sup> In the same period, 7,400 rural bank branches opened. Also, nearly 109 million Basic Savings Bank Deposit Accounts (BSBDAs) have been added, increasing the total number of BSBDAs to 182 million. The share of ICT based accounts also increased substantially between 2010 and 2013, from 25% to 45%. Small entrepreneurial credit has expanded as well. 33.8 million households were provided with small entrepreneurial credit during the same three-year period, even as the number of farm sector households increased by 9.48 million. In the nonfarm sector, the number of households grew by 2.25 million and 3.6 million households have obtained new credit. About 490 million transactions were carried out in ICT accounts through BCs in the same period.” (Mazzotta, et al., 2014)<sup>19</sup>

These results are impressive. In our recent interviews with some of the Indian local small business owners that also act as banking outlets, they reported that close to 40% of their total income now comes from banking outlet transactions. This is the definition of value creation. In this model, the small business owner (the banking outlet), the consumer (the previously unbanked), and the government (by increasing

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<sup>19</sup> Mazzotta, et al. Institute for Business in the Global Context, Cost of Cash in India, 59

tax collection and formalizing the informal) capture most of the value created. There is still value to be captured by the private sector, companies like Paytm, mPesa, and Fino are living proof.

### **Why is it beneficial to go Cashless: From a business perspective**

Cash management is by far the most talked about motivator to drive out cash. Companies spend millions of dollars a year in the process of managing its cash on top of other issues such as the potential for theft, and inefficiencies. During an on the field visit to review microfinance lending, we accounted that roughly 40% of the time a clerk interacted with their customer was spent counting cash and registering the cash transaction, a 40% downtime during a customer interaction also represents an opportunity cost for both the customer and the clerk.

Other examples, however, do favor cash. In some interactions, like a line at the cafeteria during lunchtime, a cash transaction is incredibly fast while an electronic transaction can be significantly slower; this, however, can be solved with technologies that are currently quite cheap and easy to implement.

Going back to cash management, the Association of Certified Fraud Examiners (ACFE) publishes yearly Report to the Nations on Occupational Fraud and Abuse; its data provides an excellent example for how cash management affects business. In their 2011 report, the data found suggested that small business are twice as likely as a large business to suffer from skimming, more likely to suffer from cash larceny, and



to also have more cash on hand than large businesses. Similar to the approach we used to justify our point from the consumer perspective, the lower the income level is, the more the impact is magnified.

Risk prevention is also an enormous cost for all cash-handling businesses. Security guards are usually in place, cash transportation carries a cost and theft insurance is also paid for, granted, insurance is also needed for electronic fraud however premiums on both are different, in which fraud prevention for electronic transactions is usually cheaper.

In our assessment, however, the most compelling argument for a transition into cash-lite, the opportunity for real disruptive innovation. “Disruptive innovations are made possible because they get started in two types of markets that incumbents overlook... low-end footholds and new-market footholds.” (Christensen, Raynor, & McDonald, 2015)<sup>20</sup>. By going cashless, and therefore digitizing large parts of the population, new-market footholds will open up for companies to expand their e-commerce offerings, their digital sales of insurance, mutual funds, savings products, among others. By building on these verticals, the product offerings could be unlimited. As stated in the summary portion of this paper, in Panama only 43% of the population is currently banked, let us assume that all of these people are active users of their savings accounts to transact. If through digitizing cash and making digital transactions ubiquitous we could increase banking rates to 64% putting Panama in par with neighboring Costa Rica,

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<sup>20</sup> Christensen, Raynor & McDonald, Harvard Business Review, What is Disruptive Innovation?

that would mean the total addressable market for e-commerce and financial services would grow by almost half, driving real disruptive innovation.

Now, the real argument becomes, how can this be done in a fast and efficient way? That is what we attempt to address in this paper.

### **Data Privacy.**

Data privacy is one of the leading arguments against evolving into a cash-lite world. The first argument I would use against this concern is that we already share information that is more telling than our transactions. Through our smartphones, companies and governments can trace our locations, our contacts, our preferences, and a plethora of other things, including online-only transactions, e.g., e-commerce. The question then becomes, does going cash-lite place a dent on our privacy? The battle for privacy is on a larger scale.

Now, let's address the privacy issue in isolation to the rest. First, we propose to be cash-lite, and by lite we mean there is still use for small denomination coins of, say one or five dollars; this would enable a series of anonymous, small transactions to happen still. Also, we must think about the different ways an economy can go cash-lite which are mainly two, government-driven or private sector driven. If an economy were to transition via private sector innovation, then the consumers can demand companies to put in place privacy measures, such as an end to end encryption (E2EE), to prevent surveillance or tampering. This

system is well-known, and it makes the information being transmitted available only to the parties involved in the transaction.

If government drives the innovation, then E2EE is also an option; however, it is highly unlikely that a government would agree to comply with this. Governmental eavesdropping is a valid concern; however having healthy, strong institutions can help control this. However, our approach in this paper is to have this innovation driven by the private sector; the government does, however, play a huge role in the development by putting in place a series of initiatives to incentivize the private sector, and India is an example of this.

### **III. The Indian Cashless Experiment**

“There comes a time in the history of a country’s development when a need is felt for a strong and decisive step. For years, this country has felt that corruption, black money, and terrorism are festering sores, holding us back in the race towards development.” Speech on Demonetization (Modi, 2016)<sup>21</sup>

In modern times, no democracy has taken a step as bold as India did on November 8<sup>th</sup>, 2016. What Prime Minister Modi fails to mention in his speech is that by invalidating Rupee notes of 500 and 1000,

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<sup>21</sup> The Wall Street Journal, Full Text of Indian Prime Minister Narendra Modi’s Speech on Replacing Largest Rupee Notes, <https://blogs.wsj.com/indiarealtime/2016/11/08/full-text-of-indian-prime-minister-narendra-modis-speech-on-replacing-largest-rupee-notes/>

he was invalidating roughly 86% of all cash in circulation. Various industries felt these ripple effects. The micro-lending industry, for example, reported the following: “Loan Loss Provision (LLP) expenses have increased significantly from the previous years. In 2017, LLP to Operating Expenses is 19% whereas it was only 9% in 2016 because of demonetization” (Nandi, Nandan, & Koshy, 2017)<sup>22</sup>, this was due to a *cash-crunch* since common, unbanked Indian citizens no longer had sufficient cash in hand to make day to day payment transactions.

Other short-term effects were also felt after such a drastic implementation of this policy. According to various reports<sup>23</sup> companies like Hindustan Unilever Ltd., and Nestlé reported declines in profit and revenues, tractor sales to farmers slowed down, and sales declined in the car industry and two-wheelers. After 12-months however, positive effects also began to surface<sup>24</sup>

- There was a rise in credit card spending of about 57%
- The number of new taxpayers increased by 26%
- Paper-based shell companies which dealt with black money and hawala transactions (money transfer without money movement) were also affected. According to some reports, the closure of up to 58,000 bank accounts belonging to 35,000 shell companies also happened.

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<sup>22</sup> Sa-Dhan, The Association of Community Development Finance Institutions, 35

<sup>23</sup> Chakravorti, Harvard Business Review, Early Lessons from India’s demonetization experiment, <https://hbr.org/2017/03/early-lessons-from-indias-demonetization-experiment>

<sup>24</sup> Singh, Financial Express, Narendra Modi’s demonetization completes 12 months: A look at 12 surprising changes, <https://www.financialexpress.com/economy/narendra-modis-demonetisation-completes-12-months-a-look-at-12-surprising-changes/924657/>

- A spike in digital payment platform users was also perceived. Companies like Paytm reported an increase in user base from roughly 140 million to 280 million in only one year, with several of these new customers being first-time financial services users.

As we can see both positive and negative effects can be drawn out of the Indian demonetization experiment, and from a high-level, it can be observed that most of the adverse effects were felt in the short-run, while the positive effects were felt in the long-run. This paper, however, looks to evaluate how they made it happen and draw from that experience a framework to implement in other markets.

### **How was demonetization able to happen?**

While the implementation of demonetization seemed to have happened overnight, as addressed in the summary part of this paper, realistically it did not. To successfully launch and implement a demonetization strategy the Indian government had to rely on a series of activities and initiatives that were long before implemented, that were in-course or would be soon implemented.

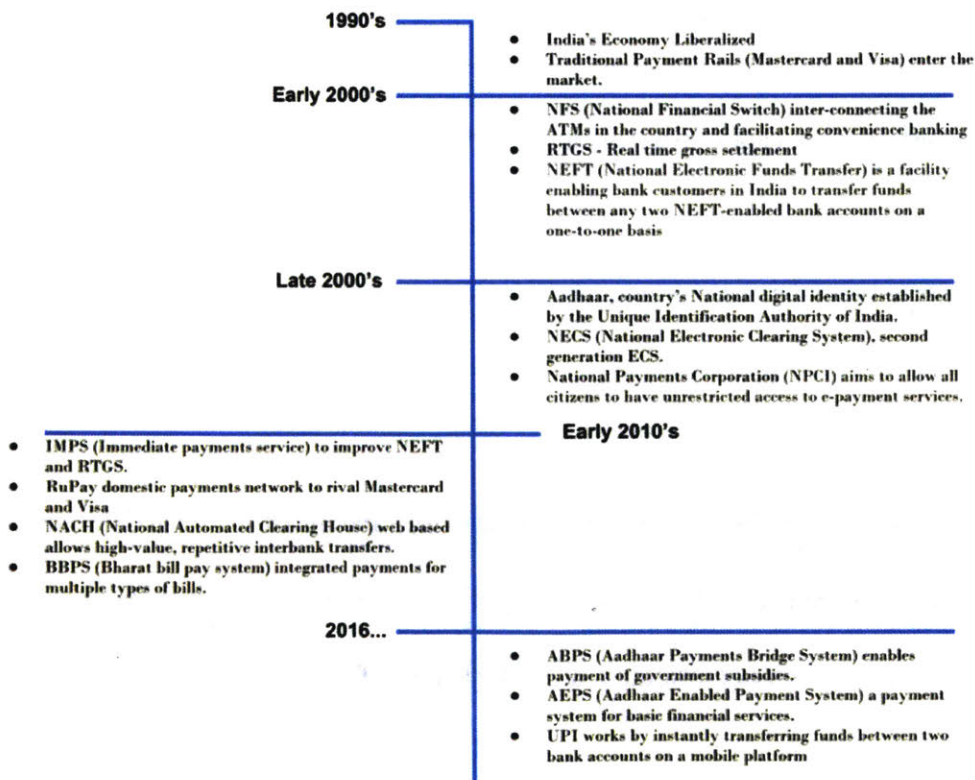
Figure 3 shows a long list of these key set of activities and initiatives started decades before. From the economic liberalization of India's economic policies in 1991 which had the goal of making the economy more market and service-oriented, on to the launch of innovative platforms like UPI, AEPS, and

ABPS. After carefully deep diving and studying these activities, four key conditions stand out from the Indian experiment, let us now explore these conditions.

**a. A regulatory environment for a free and enabling market.**

The mention of a free and enabling market which in India it began through the economic liberalization of 1991, is far from a political statement. As stated in the introduction and summary section of this paper, one major component of the digitization approach is private sector growth and private sector-driven innovation, and to enable this to happen; a free market economy needs to be in place to enable investment and entrepreneurship that will drive much-needed innovation. Otherwise, the full-weight of these activities and initiatives will rely on a small segment of the public sector.

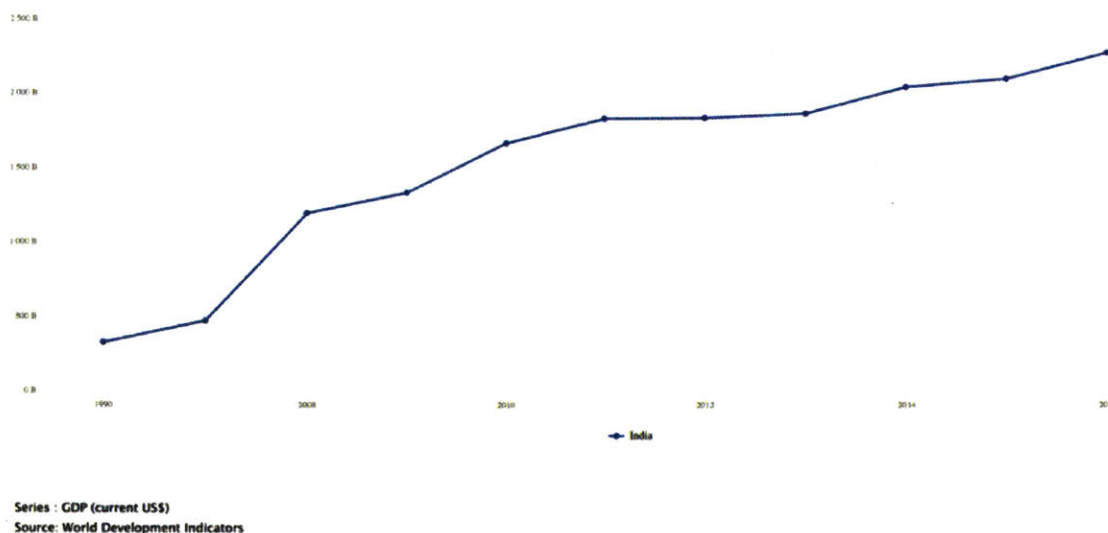
**Figure 3**



Source: (Ganu, 2018)

Economic liberalization in India becomes prevalent because it included, among other things, a reduction on import tariffs, deregulation of markets, reduction of taxes and an increase in capital inflows. Since economic liberalization happened, India's economy has seen a significant growth regarding Gross Domestic Product (GDP), GDP per Capita and other non-economic indicators such as literacy rates and infant mortality rates. The real correlation of economic liberalization may not entirely be the causal effect of these improvements however the exponential improvements shown post-liberalization lead to believe that it had to play at least an important role.

**Figure 4 – India's GDP Evolution in absolute terms**



Concerning foreign direct investment, an essential driver for innovation, liberalization reform also played a key role. A 2008 study filed by The Institut Français des Relations Internationales (Ifri) found that since liberalization there was an exponential growth on foreign companies in India<sup>25</sup>. From 1957 to

<sup>25</sup> Belhoste, Grasset, Centre asie ifri, The Chaotic History of Foreign Companies in India, 11

1991 the number of foreign companies in India declined from 551 to 489, however, after liberalization, there was a steady increase in foreign firms reaching 2,040 by 2005. Moreover, this number has continued to increase, by 2014 the Ministry of Corporate Affairs of India reported<sup>26</sup> that 4,170 foreign companies were registered in the country out of which 92 are in the Financial sector, and 56 are in the Communications sector, both sectors relevant to our study. Just to bring the point home, a free, accessible economy is a requirement to enable the innovation required to transition into a digital world.

Another vital aspect is India's progression in its ease of doing business as measured by the Doing Business Indicator<sup>27</sup> from the World Bank. India ranked at 130 out of 189 in 2016, however, by 2018 it was ranked at 100. Most importantly as the Doing Business Report for 2018 highlights, "India stands out this year as one of the ten economies that improved the most in areas measured by Doing Business." Now, one may ask, why is this important? Well, a meta-analysis conducted by the World Bank<sup>28</sup> in 2013 found that "better overall regulation is correlated with more FDI inflows per capita" (The World Bank, 2013), and that "[nearly 2,000] articles often suggest that higher Doing Business rankings will be associated with more foreign investment, which is believed to create jobs, bring in **new technologies** and processes and have other beneficial collateral effects on the real economy." (The World Bank, 2013). The importance of highlighting a favorable regulatory environment and the importance of how it ranks on objective indicators is that to make an evolution as the one proposed, regulation has to become an enabler of business instead of a hindrance.

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<sup>26</sup> Ministry of Corporate Affairs, Government of India, Indian and Foreign Companies, <http://www.mca.gov.in/MinistryV2/indianandforeigncompaniesllps.html>

<sup>27</sup> The World Bank, Doing Business Ranking, <http://www.doingbusiness.org/rankings>

<sup>28</sup> The World Bank, Does Doing Business Matter for Foreign Investment?, <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB13-Chapters/DB13-CS-Doing-Business-matter-for-FDI.pdf>



A final example of private-sector government enablement is the government announced subsidy of the Merchant Discount Rate ('MDR') for all transactions up to Rs. 2,000 (\$30.91), for two years<sup>29</sup>. This means the government is doing the weightlifting for all MSMR ('Micro Small and Medium Retailers') to start accepting digital payments to remove acceptance barriers. The idea behind this is that after two years, enough value will have been created for MSMR that it will be unfeasible to revert to cash-only. Also, while this added subsidy does represent an additional cost for the government, it should also bring new tax collection, which might not make up for the cost in the short run; however, it should more than make up for it in the long run.

#### **b. An inclusive and accessible identity for all, a digital identity.**

The next significant milestone in the Indian experiment was the launch of Aadhaar, the country's digital identification. According to the UIDAI (Unique Identification Authority of India) website this is the short, simple description for the identification number; "Aadhaar number is a 12-digit random number issued by the UIDAI ("Authority") to the residents of India after satisfying the verification process laid down by the Authority."<sup>30</sup> (UIDAI, 2018)

Aadhaar is also free and available to every resident of India. The verification process required is described in figure 4.

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<sup>29</sup> KPMG, India Soars Higher, 5

<sup>30</sup> Unique Identification Authority of India, About Aadhaar, <https://uidai.gov.in/your-aadhaar/about-aadhaar.html>

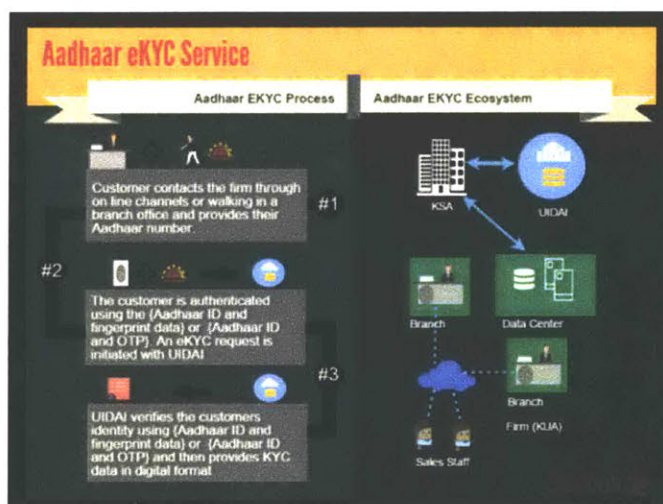
**Figure 5**

<b>Demographic Information</b>	<ol style="list-style-type: none"><li>1. Name</li><li>2. Date of Birth (verified) or Age (declared), Gender,</li><li>3. Address,</li><li>4. Mobile Number (optional) and;</li><li>5. Email ID (optional)</li></ol>
<b>Biometric Information</b>	<ol style="list-style-type: none"><li>1. Ten fingerprints</li><li>2. Two Iris Scans</li><li>3. Facial Photograph</li></ol>

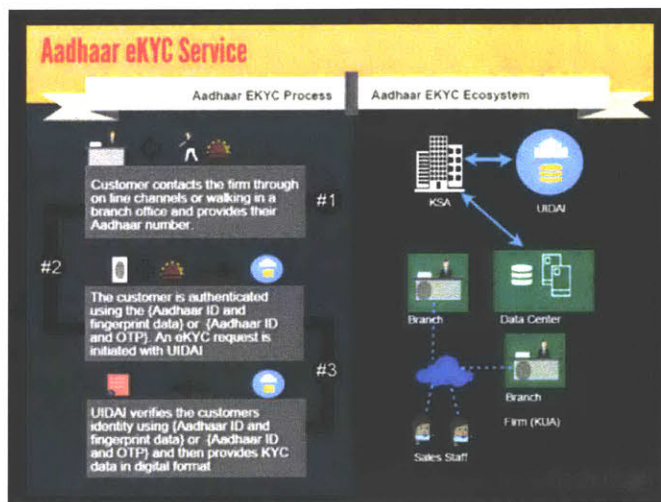
A fundamental distinction of inclusion for Aadhaar is the reduction of barriers to including the most diverse of populations. As it is known, rural communities sometimes lack access to health institutions; therefore, births are given outside of government-linked health institutions making the official registration of some residents nearly impossible. To counter this fact, UIDAI first requests for a date of birth as validated by a birth certificate while going through this process of incorporating everyone into a digital identification, however, if unavailable, a simple verbal declaration of age will suffice. The request for Mobile Number and Email ID are also critical coming from a governmental institution. A segment of the population that is just being included into the digital identification system may be unfamiliar with these concepts; however, it being mentioned and requested by representatives of a governmental institution can begin to generate consciousness and curiosity around the existence and availability of these.

Other critical points for this kind of identification is that it is a “strategic policy tool for social and financial inclusion, public sector delivery reforms, managing fiscal budgets, increase convenience and promote hassle-free people-centric governance,” as stated by UIDAI website<sup>31</sup>. The stated objective is clear and straightforward to understand; digital identification is a crucial requirement for social and financial inclusion especially in developing countries like India and Panama which have an ever-growing inequality gap.

Regarding AML (Anti-Money Laundering) Aadhaar’s digital approach also plays a vital role. Also enables e-KYC (electronic Know Your Customer) to comply with the highest standards of AML but in a quick, efficient way. Through a simple biometric verification, the UIDAI can provide sufficient verification of who the individual is, a meet needs for different sectors, e.g., Banks, Insurance companies, Government Organizations, Passport Offices, Airports, Depository Participants, Payment Gateway Providers providing only the required information for each sector and preserving customer privacy.



<sup>31</sup> Unique Identification Authority of India, About Aadhaar, <https://uidai.gov.in/your-aadhaar/about-aadhaar.html>



Source: Finahub. Rajesh Sukumaran. (Sukumaran, n.d.)

### c. An all-hands-on-deck driving force.

After looking at the first two principal components that will enable this evolution a driving force is needed. That driving force in India is the National Payments Corporation of India ('NPCI'). As it is described in the corporations website<sup>32</sup> the NPCI is a non for profit, an umbrella organization for operating retail payments and settlement systems in India created under the provisions of the Payment and Settlements Systems Act of 2007 and promoted by the RBI (Reserve Bank of India). The NPCI is ran by a consortium of ten promoter banks, from both the public and the private sector.

<sup>32</sup> National Payments Corporation of India, About us, <https://www.npci.org.in/about-us-background>

One could very well ask, after making a case for liberalization a few paragraphs before, why should we now argue for a government-enabled institution? The answer is relatively simple if a market wants to leapfrog and catch up to the most advanced economies, then both the private and public sector need to work in unison, and the NPCI does precisely that. As the NPCI well describes on their website, “... the aim is to transform India into a less-cash society by touching every Indian with one or other payment services.” (National Payments Corporation of India, 2018). The corporation then has a clear vision it pushes for, and it dedicates all of their effort to achieve those efforts.

Since its inception, the NPCI is responsible for creating and rolling out some of the first advancements to digitize and provide first time access to financial services. Highlighting the most important ones will not only show the benefit of these efforts, but it will also show the ability to execute quickly and efficiently once the formation of a public / private consortium comes to happen. We will explore the most critical milestones below.

### **Immediate Payment Services (‘IMPS’)**

IMPS provides real-time, interbank funds transfer that can be accessed on multiple channels like mobile phones, internet, ATM, SMS, branches, and USSD - \*99# - (A service launched to take the banking services to every common person. Banking customers can avail this service by dialing \*99#, a “Common number across all Telecom Service Providers (TSPs)” on their mobile phone and transact through an interactive menu displayed on the mobile screen)<sup>33</sup>

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<sup>33</sup> National Payments Corporation of India, Milestones, <https://www.npci.org.in/milestone>

Figure 7

REGISTRATION FOR REMITTER	REGISTRATION FOR BENEFICIARY	FOR REMITTER TO SEND MONEY
<ul style="list-style-type: none"> <li>• Register with the mobile banking service of the bank.</li> <li>• Get Mobile Money Identifier (MMID) and MPIN from the bank</li> <li>• Download Software (Application) for mobile banking (ensure the compatibility of mobile with the application) or use the SMS facility on your mobile if your bank provides IMPS on SMS</li> </ul>	<ul style="list-style-type: none"> <li>• Link your mobile number to the account in the respective bank.</li> <li>• Get Mobile Money Identifier (MMID) from the bank</li> </ul>	<ul style="list-style-type: none"> <li>• Login to the application and select the IMPS menu from the IMPS or use the SMS facility in your mobile if your bank provides IMPS on SMS</li> <li>• Get Beneficiary Mobile number and MMID</li> <li>• Enter Beneficiary Mobile number, beneficiary MMID, Amount and your MPIN to send</li> <li>• Await confirmation SMS for the debit in your account and credit in the beneficiary account</li> <li>• Note the transaction reference number for any future query</li> <li>• Share your Mobile number and MMID with the remitter</li> <li>• Ask the remitter to send money using your Mobile number and MMID</li> <li>• Check the confirmation SMS for credit to your account from the remitter</li> <li>• Note the transaction reference number for any future query</li> </ul>

A simple registration service and requirement make IMPS a service that is accessible to many indistinctive of the type of how an individual may try to access the service, e.g., via a feature phone, smartphone, bank branch.

## **Aadhaar Enabled Payment System (AEPS)**

AEPS looks to simplify IMPS, even more, its primary objective is to speed track financial inclusion. AEPS, as its name implies, is built on top of Aadhaar's digital identity and looks to enable transactions to MicroATM's or Business Correspondents ('BCs'). BCs are small business, mostly convenience stores, located in several parts of the country, usually remote locations, that are enabled by two government institutions; 1. UIDAI, to provide connectivity to their national identity database and confirm the identity of the individuals through biometric verification; 2. RBI, to provide access to the financial network to transfer funds, cash in, cash out and verify balances.

One of the other advantages generated by having these BC's is that they also act as UIDAI representatives. While visiting these shops during our fieldwork in India, we were able to validate how residents could walk into the store and request access to Aadhaar for either the first time or for their replacement card. This way, access to having a national ID is also outsourced to these conveniently located stores. Once, into the Aadhaar system, these individuals can then sign up for AEPS and transact.

Transacting via AEPS is simple, and it requires only three things:

- IIN (Identifying the Bank to which the customer is associated)
- Aadhaar Number
- Fingerprint captured during their enrollment

While AEPS is not utilized to provide access to new accounts by simplifying enrollment to a bank account, it does make it easier to transact, and by doing so, it improves the probability that a person will transact using their bank account whether to transfer funds, send remittances, or to cash in or cash out. Its rapidly growing utilization can easily measure the effectiveness of this platform, according to NPCI official stats<sup>34</sup> transactions had grown at a pace of 531% YoY since 2015 when 360 thousand transactions were initiated on AEPS to 90 million transactions by close of 2017.

### **A debit card for everyone. RuPay**

RuPay ends up being nothing more than an open-loop debit card for domestic only transactions. Domestic-only does pose a challenge due to the challenge e-commerce brings. If an e-commerce platform acquires transactions with a bank that is outside of the country, in this case, India, then the consumer will not have access to the transaction.

The more significant message with RuPay, however, is the access to debit cards to all segments of the population. Leapfrogging from cash to mobile-only requires significant development and adoption practices, from both the acceptance and issuing side of the business, however, when a debit card is accessible, then the acquiring side does not need to adapt to mobile-only so quickly making the issuing part more useful.

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<sup>34</sup> National Payments Corporation of India, Statistics, <https://www.npci.org.in/milestone>



During our field research, owning a debit card also proves essential especially for the unbanked population. Having a physical, tangible object to replace another physical, tangible object, like cash, makes the transition far more natural. Finally, another critical part of RuPay is its mission<sup>35</sup> which is to “Provide electronic product options to untapped / unexplored consumer segment” (National Payments Corporation of India, 2018); RuPay does not plan to compete with a segment that is already banked and cash-lite. RuPay’s goal is to create a product that will fit the needs of an untapped market, therefore tailoring its offering, pricing, benefits, costs, branding and overarching strategy to the needs of one segment only. RuPay transactions have been growing at a compounded annual growth rate of 197% since 2014. Transactions at the point of sale (‘POS’) have gone from roughly 5 million to approximately 408 million by close of 2017 (National Payments Corporation of India, 2018).

## **Unified Payments Interface (‘UPI’)**

UPI is a real break-through for India. In simple terms, UPI connects multiple banks into a single mobile application, this way real-time transactions can happen almost 24/7 between all banks associated with UPI. Since its inception, several banks, mobile wallets, and payment networks have connected to UPI.

The main advantage for UPI is that a bank or a mobile network no longer has to interconnect their system with each one of their suppliers or partners. Instead, they all connect to a government-enabled, impartial system such as UPI and are then able to offer this solution. UPI enables among other things<sup>36</sup>:

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<sup>35</sup> National Payments Corporation of India, RuPay, <https://www.npci.org.in/product-overview/rupay-product-overview>

<sup>36</sup> National Payments Corporation of India, UPI, <https://www.npci.org.in/product-overview/upi-product-overview>

- Immediate money transfer through mobile device round the clock.
- Single mobile application for accessing different bank accounts.
- Single Click 2 Factor Authentication – Aligned with the Regulatory guidelines, yet

provides a robust feature of seamless single click payment.

- The virtual address of the customer for Pull & Push provides for incremental security with the customer not required to enter the details such as Card no, Account number; IFSC.

- Bill Sharing with friends.
- The best answer to Cash on Delivery hassle, running to an ATM or rendering exact

amount.

- Merchant Payment with Single Application or In-App Payments.
- Utility Bill Payments, Over the Counter Payments, Barcode (Scan and Pay) based

payments.

- Donations, Collections, Disbursements Scalable.
- Raising Complaint from Mobile App directly.

One of the most important things that UPI has is that it can run as a backend solution for private front-end innovations, again, a solution that works to enable open business and competition to create value for both the industry and the end-consumer. In a little over a year, UPI has enabled more than 700 million transactions for different users, proving its easy adoption and value creation.

## **Bharat Bill Pay Service ('BBPS')**

BBPS takes convenience to a whole other level. Moving away from UPI's P2P, interbank operability, BBPS connects directly with billers. Through BBPS a user can remotely pay for electricity, telecom, gas, water, and according to the NPCI, they will enable future categories such as insurance, mutual funds (which could drive increased savings from all segments of the population), school fees, credit cards, taxes, among others.

Very simply through BBPS a long day filled with errands now becomes a day in which everything is paid for in just a couple of minutes. Once the payment is made, the user receives an immediate confirmation via e-mail or SMS.

## **Bharat QR**

Bharat QR is a new service provided by NPCI. While not significantly innovative, e.g., other private companies like Paytm already provided this service via a proprietary QR, Bharat QR it is a market alternative for merchants that aims to connect the whole country under a single form of QR. The QR code (QR stands for Quick Response code, and it is 10 times faster than a simple bar code<sup>37</sup>) technology is simple, instead of having a giant POS machine for transactions, the merchant will have a printed QR code (a machine-readable code consisting of an array of black and white squares, typically used

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<sup>37</sup> The Economic Times, One nation, under code.

<https://economictimes.indiatimes.com/industry/banking/finance/banking/one-nation-under-code-how-india-leads-the-way-in-the-interoperability-of-qr-code-for-payments/articleshow/60986772.cms> (The Economic Times, 2017)

for storing URLs or other information for reading by the camera on a smartphone)<sup>38</sup> (Google Dictionary, 2018), on a sheet of paper or cardboard and it is displayed near the cashier. This QR code acts as a unique identifier for each merchant; therefore, the only thing that needs to happen is for a customer to have a smartphone with a payment application that allows QR code reading, such as the Bharat QR application. Once the user scans the QR code they can input the amount to be paid, both the merchant and the user will receive a notification, usually via SMS of the transaction and the transaction is made.

One of the most significant innovations behind this technology is that it closes the loop left open by UPI and BBPS, the former focuses on person to person transfers ('P2P'), while the latter focuses on bill payments. Bharat QR then focuses on person to merchant ('P2M'), i.e., going to a grocery store, a convenience store, a shop at the side of the road, in other words, everyday transactions. It also significantly reduces cost on the acquisition side, the maintenance side and the replacement side for the acquiring merchant. From having to operate a machine to merely having cardboard or piece of paper with their own QR identity. Finally, QR transactions work offline but are still instantaneous. Due to them being linked to a merchant transaction, upon the user (or payer) making the payment request by reading the QR code, the transaction can settle immediately. The QR code then becomes a cheaper, faster, more comfortable alternative for payment transactions.

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<sup>38</sup> Google, What is a QR Code, <https://www.google.com/search?q=what+is+a+qr+code&oq=what+is+a+qr+code&aqs=chrome..69i57j0l5.2810j0j4&sourceid=chrome&ie=UTF-8>

#### **d. A booming private sector, driving internet and infrastructure.**

As explained previously the activities and initiatives required for quick and effective digitization start with a robust regulatory environment for a free and enabling market as well as a driving force like NPCI. However, it is also dependent on a private sector both from a direct and indirect involvement.

Direct involvement in India can be traced back to innovative companies like Paytm, Airtel and MobiKwik, which have provided financial services like mobile wallets or digital savings accounts to a massive audience in a simple, fast and efficient way, and have collaborated with the long and arduous process of customer acquisition and education. Indirect involvement in India can be traced back to companies that provide services on top of which this digitization is built on, e.g., internet service providers and mobile phone companies. Digitization without access to fast, cheap and dependable internet is useless, same goes for access to a phone being that they are smartphones, the ideal situation, or feature phones, less ideal but still practical. Now, let us look at both involvements.

#### **Direct involvement.**

According to a recent MIT study<sup>39</sup>, which looked at data reported by the RBI, mobile wallet transactions and mobile banking transactions have experienced a triple-digit compounded average growth rate since 2012. Concerning volume (amount of transactions), the former has grown at 193% while the latter at roughly 100%, and concerning value, mobile wallet transactions have increased by 167% while mobile banking transactions have grown by 236%.

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<sup>39</sup> Ganu, Massachusetts Institute of Technology, The Evolution of Paytm.

Growth percentages might be misleading; however, this is not the case in India. Paytm, who is by far the leader in the mobile wallet industry, with an estimated 39% of the total market share, has declared to have over 300 million unique customers with a goal of reaching 500 million by 2020.

While conducting fieldwork with Paytm, we were able to experience first-hand how their onboarding process looks. For merchants, it is a high touchpoint onboarding process which involves face to face training or mandatory digital training. Paytm’s success has been built on top of customers digital familiarity with smartphone applications making their adoption curve much shorter. The recent Digital Planet 2017 report published by The Fletcher School at Tufts University which creates a Digital Evolution Index (‘DEI’) scored India as a breakout country<sup>40</sup>. A breakout country stands for one who is low-scoring in their current state of digitization but are rapidly evolving. Furthermore, when the study looked at the digital trust reported by users, India was found to have a Trust Surplus which means they have patient, and most importantly, engaged users.

**Figure 8**



<sup>40</sup> Chakravorti, Chaturvedi, The Fletcher School, Digital Planet 2017, 8

Finally, companies like Paytm make their presence feel ubiquitous, to drive network effects. Just by driving in India one can see Paytm affiliated retailers at any corner, regardless of size. This private sector drive becomes a tremendous push for digitization without much government involvement. Paytm has essentially educated roughly 300 million Indian residents in the use of wallets without government involvement, and this is why a private sector is so important.

We cannot close this section without reemphasizing that the government did have to act as an enabler. Paytm has benefited dramatically from the capital injection and knowledge it has received from the Chinese powerhouses Ant Financial and Alibaba who together own<sup>41</sup> a reported 40% of the company. This investment which brought with capital and know-how was only made possible by a healthy and improving regulatory environment as explained in above sections.

### **Indirect involvement.**

According to the World Bank's data repository, as of 2016, 30% of the population in India was using the internet. While this pales in comparison to China (53%) or OECD member countries (78%), it is a long way up from their meager 7.5% in 2010. Now their greatest evolution comes from their increase in mobile cellular subscription which according to the same report stand at a little over 1.1 billion by close of 2016. Both access to the internet and mobile cellular subscription are required, parallel initiatives that need to be in place or happening rapidly for a payments digitization process to happen.

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<sup>41</sup> Economic Times, Alibaba to hike stake in Paytm's marketplace for \$177 million, <https://economictimes.indiatimes.com/small-biz/money/alibaba-to-hike-stake-in-paytms-marketplace-for-177-million/articleshow/57428717.cms>

One of the drivers of this growth has been the company, Reliance Jio; a company focused on offering cheap access to cellular phone service and hardware. Launched in 2016, Jio reportedly now has over 160 million customers in India<sup>42</sup>. While their profitability is in question, their value creation is not. Offering accessible 4G feature phones powered by partners like KaiOS and cheap smartphones their sales have skyrocketed.

Now, with a large size of the population having internet and mobile phones, and with them being familiar on how to operate a phone and its various applications, the utilization of a payments application is no longer foreign and can be quickly learned. The question then becomes, can a digital application provide sufficient value for the customers to adopt it utilize it? That is the challenge, and companies like Paytm provide an obvious path for how to create this value.

**e. Factor Conditions. Access to high-quality human resources.**

As a fifth activity and initiative before suggesting how to implement this in Panama, we must consider the quality of human resources in place to be able to execute such transition. Also, there are two ways that a country can get talent, just a like a company does, they can either grow it in-home or bring it from the outside. India, fortunately, has been able to provide high-quality education to those who can

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<sup>42</sup> Economic Times, Reliance Jio subscriber base touches 160 million, <https://telecom.economictimes.indiatimes.com/news/reliance-jio-subscriber-base-touches-160-million/62237555>



access it<sup>43</sup> (Top Universities, 2018). The Indian Institute of Technology Bombay ('IITB') is featured in the QS World University Rankings for 16 subjects, including Computer Science and Information Systems and Engineering and Technology. The country then relies on homegrown talent to build world-class competitive products that will create value for users.

This is by no means a small feat. When a country is unable to supply talent to the workforce, it is then challenged with trying to understand where this supply of talent will come from, and there are limited ways to get a steady supply of talent. A market has to adapt their education system to produce competitive highly skilled individuals; this is the ideal route; however, this route is only long-term and can take up to two or more generations to yield its effects. The other route is to loosen up immigration policies to attract foreign talent, while also providing incentives, such as income tax breaks for individuals, and special commercial zones for firms. These initiatives come at a high cost, in some cases, countries will entirely forfeit income taxes to incoming foreign workers and will even establish free tax zone areas for companies to establish their business. If, on the other hand, they would be able to create their own skilled and competitive talent, much of these costs could be forfeited, and invested in other areas.

#### **IV. How can Panama emulate India?**

Now that we understand the set of initiatives and activities that India relied on to initiate this full-scale evolution; a) A regulatory environment for a free and enabling market; b) An inclusive and accessible identity for all. A digital identity; c) An all-hands-on-deck driving force; d) A booming private sector,

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<sup>43</sup> Top Universities, Top Ten Universities in India, <https://www.topuniversities.com/university-rankings-articles/brics-rankings/top-10-universities-india-2018>

driving internet and infrastructure; e) Factor Conditions. Access to high-quality human resources - let us then take a look at how Panama stands with each by questioning:

- Does Panama have these initiatives and activities in place?
- If they are, are they mature enough? Are they efficient and well-implemented?
- If they are not, are they in route to being implemented? Or, are there alternative routes to

the ones taken by the Indian government, and market?

### **A regulatory environment for a free and enabling market.**

On December 1989 Panama would put an end to a military dictatorship that hindered its free market for almost 21 years. With the new implementation of a democratic model, the country began an uphill battle to create competitive regulation, to open its market by providing tax incentives to foreign investment, and by welcoming foreign development.

Panama was coming from a challenging situation. Military intervention by the US Armed Forces on December 1989 had left the country in shambles. This intervention led to the pillage of many stores and banks; also, Panama had been economically sanctioned by the United States government due to disputes from each country's heads of state over whom to appoint as Administrator of the Panama Canal. These sanctions which led to bank closures and cash hoarding created an economic disaster for the country.

According to the World Bank<sup>44</sup> in 1990 Panama had a population of 2.4 million with a GDP of only 6.43 billion, an emerging country by most measures. By 2016 the country's GDP had grown to 55.1 billion with a population of 4.0 million a middle-income country. Now, how was the country able to make this transformation? Well, its policymakers set in place a series of activities and initiatives that enabled this growth. For example<sup>45</sup>:

- In 1997, the government privatized the government-run national phone company. The infrastructure at the time was outdated and required significant investment. Therefore, as part of the privatization deal, Panama had to grant exclusive access to the incoming phone company, Cable & Wireless, hindering competition. This initiative, however, enabled the country to transition from analog to digital lines and to join the cell phone craze of the time. It is important to point out that the exclusivity Cable & Wireless enjoyed has since ended and Panama now has a competitive telecom industry with over big players in the mobile phone industry and various more in the internet service industry.

- A domestic airport, Marcos Gelabert, was taken out of the city center and taken on to the outskirts. Since then the city center has developed into a Financial and Shopping Center in the San Francisco County within the Panama district. According to the current Deputy Major, Raisa Banfield, this county which is only 5 km<sup>2</sup> in territory, accounts for 5.1% of the country's total GDP<sup>42</sup>.

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<sup>44</sup> The World Bank, World Bank Data.

<sup>45</sup> Arbesu-Cardona, Diario La Prensa, Ahora tenemos Metro... [https://impresaprensa.com/opinion/Ahora-Metro-Jorge-Arbesu-Cardona\\_0\\_3908609195.html](https://impresaprensa.com/opinion/Ahora-Metro-Jorge-Arbesu-Cardona_0_3908609195.html)

- In 2004, Law 54 was created. This swift move was made in response to increased unemployment rates. This law created a particular regulation for call centers to establish their sites in the country through tax incentives for both the companies and the expat employees they brought in. Within a few years, more than 10,000 new jobs were directly created.

- In 2007, Law 41 was implemented. This law is called Multinational Company Headquarters – the purpose of this law which provides income tax incentives, economic incentives, and income tax incentives to employees of multinational companies that establish, at least, a regional headquarter in the country. This initiative incentivized large, world-renowned companies like Adidas, P&G, Wartsila, and Hewlett-Packard.

While all these initiatives are undoubtedly essential and considerable collaborators to Panama's economic growth in many areas, when we compare the Central American nation to our model country, India and their current pace of success towards a more robust financial system with a focus on including the most impoverished through digital products, Panama still falls behind. Let us dive into a few of these areas.

## **Doing Business Rankings.**

As stated earlier, the benefits of having a good ranking in the Doing Business Indicator is very well documented. The indicator is more important for markets like Panama that do not enjoy the benefit of an attractive, scalable market that poorer (per capita) countries like China, India, Nigeria or Bangladesh enjoy. By taking a quick peek at Panama's evolution on the ranking, there is a reason for serious concern.

In 2006, the first year in which there was an official Ease of Doing Business ranking (The World Bank, n.d.)<sup>46</sup>, Panama stood at number 57/190; however, by 2018 when the latest report came out, the country is ranked at a 79/190. There are areas in which the country has made some marginal improvements, e.g., the average amount of days to open a business decreased from 19 days in 2006 to only 6 in 2018; getting credit has also become more straightforward according to the indicator, the number of adults covered by private bureau services increased from 40.2% to 66.8%. Now, this last indicator must be taken with a grain of salt, neighboring countries, Costa Rica and Colombia have 100% and 94.5% coverage respectively.

Now, if one was to dig deeper, there are some areas in which Panama's performance ranking is weak and has even worsened as time has passed. The country is ranked 180 out of 190 in the "Paying taxes" category. The country's performance was already bad in the 2006 report however it has gotten worse over the past decade. The number of payments increased from 45 to 52 according to the report, and

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<sup>46</sup> The World Bank, Doing Business Indicator.

the average tax rate increased from 32.9 to 37.2. As stated in the first section of this paper, tax collection and the ease of tax payment is one of the significant governmental benefits that digitization brings with it.

The Indian government understands this very well. Demonetization happened only a few months before the new GST (“Goods and Service Tax”) regulation, a regulation that significantly simplified tax rates across Indian states, was presented. On top of this, the Aadhaar digital identity created a digital persona for everyone, businesses and people included. This set of related activities and initiatives has significantly simplified the ease of paying taxes and collecting taxes in India. According to the Doing Business report, the average amount of tax payments made a year was 59 in 2006, however, by 2018 it was down to only 13. The hours spent in the process of paying taxes also reduced by 50 per year. It is also required to add that both demonetization and GST are barely a year in, as time continues to pass by, and users continue to adopt this will continue to improve.

The valid question then is, if a country of 1.3 billion people was able to improve so dramatically, shouldn't it be easier to drive that improvement in a country of only 4 million people? Digitizing the tax payment and collection process does not require policy, it requires execution, and this improvement is, in our assessment the clear-cut definition of low hanging fruit.

**Digital-enabling regulation and policy.**

As stated earlier, the Indian experiment provides appropriate guidance for how to correctly develop a roadmap that will provide the appropriate set of enabling regulatory initiatives to drive digitization.

Examples like establishing the NPCI, driving Aadhaar, implementing demonetization, and the government subsidized MDR for MSMR's are just a set of them. However, that is not all, recently the government of India announced<sup>47</sup> that they are working on an initiative to incentivize digital transactions by providing cash back to businesses and price benefits to consumers. These benefits are not unlimited and are both capped, the first based on the quantum of turnover through digital mode and the latter at Rs. 100 (\$1.50) per transaction – a small incentive with the purpose of driving small yet repetitive transactions. This is yet another example of a clear understanding within the Indian government of the benefits a cashless (or cash lite, as Chief Economic Advisor Arvind Subramanian called it in a recent interview) society brings to its citizens, the long-term revenues it brings to the government and the economic development opportunities it also generates such as the ones found by a Visa study<sup>48</sup> that estimated that an increase of 10% in electronic payments correlates with a 0.5% increase in consumer spending and that electronic payments can achieve cost saving worth about 1% of GDP.

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<sup>47</sup> The Times of India, Cashback to businesses, price benefit to consumers for digital transactions on anvil, [https://timesofindia.indiatimes.com/business/india-business/cashback-to-businesses-price-benefit-to-consumers-for-digital-transactions-on-anvil/articleshow/63961692.cms?utm\\_campaign=andapp&utm\\_medium=referral&utm\\_source=whatsapp.com](https://timesofindia.indiatimes.com/business/india-business/cashback-to-businesses-price-benefit-to-consumers-for-digital-transactions-on-anvil/articleshow/63961692.cms?utm_campaign=andapp&utm_medium=referral&utm_source=whatsapp.com)

<sup>48</sup> Mazzotta, et al. Institute for Business in the Global Context, The Cost of Cash in India. (The Times of India, 2018)

A very valid question then becomes, what is Panama doing, to drive a digital evolution in the payments ecosystem?

On April 4<sup>th</sup>, 2018 the President's Cabinet approved<sup>49</sup> a regulation that aims to make the financial system a more -modern- one. This new regulation among many things aims to create a structure that will enable three main transformation drivers:

1. **EFE's (Entidades Financieras Especiales or Special Financial Entities):** These entities are those that are not full-fledged financial institutions, i.e., Banks; however they do provide financial services, e.g., peer to peer payment solutions.

2. **CEFICOS (Centros de Financiamiento Colectivos or Collective Financing Centers):** These centers primary activity will be to enable collective lending, whether it is via joint liability groups, limited liability groups, peer to peer lending, or other sources.

3. **Sandboxes:** These sandboxes that are specialized in the fintech industry seek to promote, and drive sector entrepreneurship. The sandboxes will be supervised by the country's City of Knowledge ecosystem which has been the primary driver for entrepreneurship in the country for the last decade.

According to several interviews conducted, because the country lacks regulator capacity, the proposal is for the Ministry of Economy and Finance to oversee the regulation and implementation of both

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<sup>49</sup> Ministerio de Economía y Finanzas, Aprueban Modernizar el Sistema Financiero Internacional de Panama, <http://www.mef.gob.pa/es/noticias/Paginas/sistemafinancieroaprobado.aspx> (Ministerio de Economía y Finanzas, 2018)



EFEs and Ceficos. This represents an amplification of scope and duties for the ministry since such regulation should fall under the financial regulators arm, the banking superintendency.

### **A driving force?**

The analysis of a driving force, similar to India's NPCI should come as in own insight in our framework; however, our proposal of a driving force will be significantly different from that of India. The reason for this change is because Panama has had its NPCI-like institution since 1993, called Telered. Similar to NPCI, Telered is owned by a consortium of banks and its purpose is to drive a next-generation payments industry in the country; this company, however, is for profit, unlike the NPCI, and has had a stronghold in the debit card market and ATM networks since its inception in 1993. Telered was even subject to a monopoly lawsuit in 2004, which was eventually won by the firm. A decade later, however, the company still has over 95% of the debit market and nearly 100% of all ATM's under their network.

The Panamanian payment industry thus is dependent on the evolution, innovation, and drive of Telered. If the company does not evolve, the industry does not evolve. Most concerning is that contrary to what the NPCI has done in only a decade of existence by creating an ecosystem of solutions that enable private sector innovation, Telered has been unable to do in twice the time. By focusing on ATM networks and debit card issuing using its local network, it has been unable to invest in transformational infrastructures like IMPS, AEPS, UPI, BBPS and Bharat QR. This is, in our assessment an incentive issue that a for-profit, market powerful company has. In its effort to control the market it has stifled innovation.

Because of Teleread's lack of dynamism and innovation, our suggestion for a driving force will not be an NPCI-like institution however it will be an entrepreneurial ecosystem that drives innovative solutions. As stated in the introduction part of this paper, the purpose is to understand the main insights or pillars to drive change; however, it is not necessary to implement the same initiative within the pillar.

### **Recommendation.**

The first thing that becomes crucial for the country is for the National Assembly (the country's parliament) to pass the bill that will create a regulatory framework that enables EFEs, Ceficos and Sandboxes. Once this is done, there needs to be proper execution, e.g., recruiting the appropriate members to become part of the Sandbox environment and to form the committees that will oversee EFEs and Ceficos. We will address the sourcing of these members in Factor Conditions.

The second thing that needs to happen is for the country to focus on improving their Doing Business indicator as a government priority. The low hanging fruit is to create an enable a digital payments market that will create digital identities and thus should be leveraged to make the process of paying taxes much simpler. Improving in this indicator should also improve Panama's standing for the Ease of Doing Business. The government should set an explicit goal of where it wants to rank in the next five years and how it is going to do it.

Finally, in terms of strengthening their regulation and enabling a free market environment, the country needs to incentive new players to join the payment system industry. The grasp Telered has on the industry is hindering evolution. The government should focus on enabling organization like Panafintech which is a conglomerate of 13 fintech start-ups that are trying to make their way into the market – leveraging this organization will not only make the market more dynamic it will drive innovation and prosperity. We will expand more on how on the Driving Force section.

**An inclusive and accessible identity for all, a digital identity. (Tason, 2016)**

Can Panama implement a digital identity that is available for all? Is a digital identity even necessary? In our assessment a digital identity is a necessity in an evolving digital world, we should expect to leverage our digital-self to enable digital benefits. When looking at the Indian experiment, as detailed in this document, one of the significant benefits of a digital-self is the ability to provide a smooth, fast, efficient and trustworthy e-KYC process. Panama would benefit significantly of such a process – on June 2014 Panama was included in the Financial Action Task Force (‘FATF’) gray list for countries that in judges to be non-cooperative in the global fight against money laundering and terrorism. On February 19, 2016, the country was removed from the list under a set of conditions that had to be met in the coming years<sup>50</sup>.

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<sup>50</sup> Tason, La Estrella de Panama, Panama sale de la lista gris de la GAFI, <http://laestrella.com.pa/economia/panama-sale-lista-gris-gafi/23922880>

After the removal from the list, the President of the banking association of Panama was quoted saying “As a direct effect of Panama’s inclusion in the gray list, we saw more than twenty international correspondence relationships cancelled, in addition to the cancelation of line of credits and an increase in their interest rates” (Tason, 2016) – the inclusion, therefore, had tangible effects on the country’s economy, particularly in the financial industry.

Being able to implement an e-KYC process would be extremely beneficial for the country. Not only to better assess Politically Exposed Persons (‘PEP’) or to more efficiently conduct the process by implementing non-face to face KYC that can still evaluate people in depth, but to also meet with their commitment with OECD countries to facilitate a multilateral and automatic exchange of information<sup>51</sup>. Having a digital ID also facilitates the registration for all of the citizens, particularly those unaccounted for in rural areas. As we learned with Aadhaar, having biometric identification reduces the value of needing a physical card; instead, the person’s primary identification is their fingerprint.

So, where is Panama in this digital identity evolution? Since 2015 the country’s identification administration, Tribunal Electoral (‘TE’) in partnership with the Autoridad de Innovacion Gubernamental

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<sup>51</sup> Ministerio de Relaciones Exteriores, Panama Avanza en su compromiso con el intercambio automatico de información, <https://www.mire.gob.pa/index.php/en/noticias-mire/10363-panama-avanza-en-su-compromiso-con-el-intercambio-automatico-de-informacion-2>

(‘AIG’) have been working on a digital identification initiative<sup>52</sup>. The initiative consists in implementing a chip to the current ID card that will be multipurpose. This chip will contain things such as:

- a. Driver history (for those with a drivers license.)
- b. Social Security and Medical history.
- c. Tax information
- d. Information to travel within central American countries without a passport.
- e. Credit and debit cards.
- f. Loyalty programs.
- g. Public transportation.

On February 2018 the administrator for AIG launched a project<sup>53</sup> that would test twenty thousand digital ID’s. The plan, the administrator said, is to start with this chip card and later evolve into an online ID that can be accessed via your mobile phone or desktop computer.

### **Recommendation.**

The country seems to be on the right path to provide a digital identity to leverage a set of essential services for their citizens. After an in-depth assessment, two things remain outstanding that need to be prioritized.

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<sup>52</sup> Tribunal Electoral, Proyecto Cedula Inteligente, <http://www.tribunal-electoral.gob.pa/direccion-nacional-de-credulacion/proyecto-cedula-inteligente/>

<sup>53</sup> Televisora Nacional, Presentan Avances del Proyecto cedula inteligente, [https://www.tvn-2.com/nacionales/Presentan-avances-proyecto-inteligente-Panama\\_0\\_4949505030.html](https://www.tvn-2.com/nacionales/Presentan-avances-proyecto-inteligente-Panama_0_4949505030.html) (Televisora Nacional, 2018)

First, the digital ID initiative has missed a series of deadlines that were initially committed to. The test that involved twenty thousand ID's, according to interviews conducted, was initially scheduled for 2016, it was not until 2018 that it was launched. Also, the process of hiring their providers, e.g., payment networks and communication networks, needs to be more transparent and efficient giving opportunity to international incumbents and startups.

Secondly, the project needs to include e-KYC as part of the scope of this digital identity. Doing so would be a huge benefit for the financial industry and solidify the financial industry's ability to perform sound KYC evaluations.

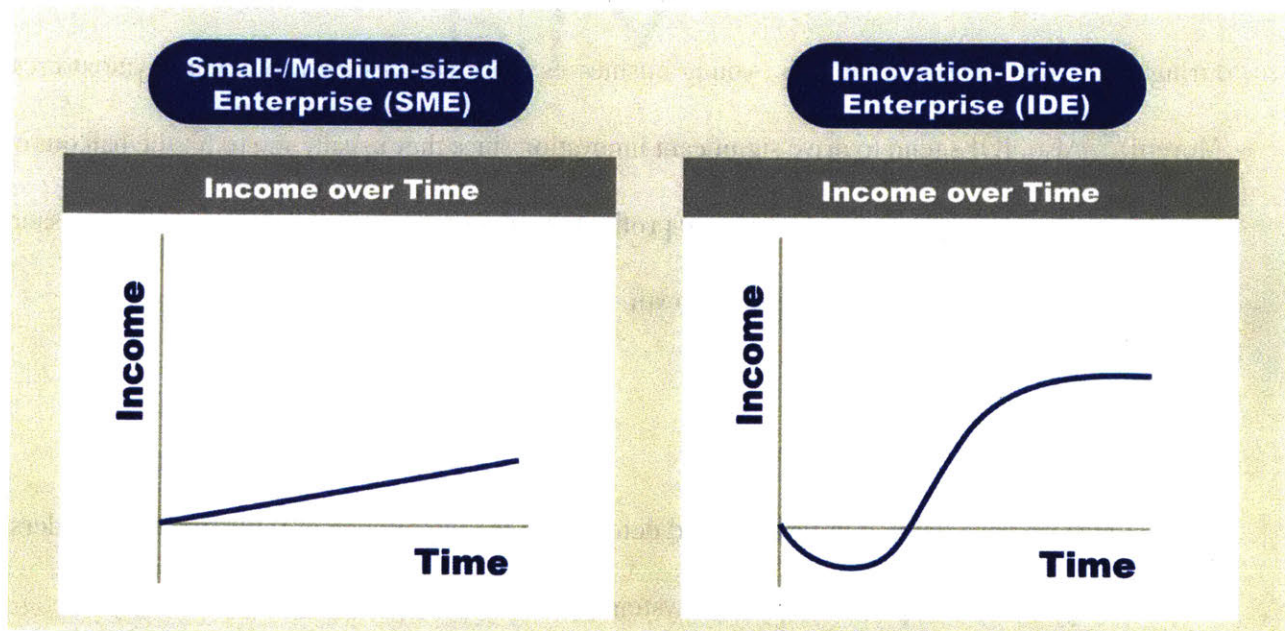
### **An all-hands-on-deck driving force.**

After performing an in-depth assessment of what Panama needs, this is the most important part to develop and work on. As stated in the free an enabling market section, our approach here will not be to suggest an NPCI-like organization, such organization in Panama already exists and has failed to drive industry innovation successfully. Our recommendation will be leveraged on research by Dr. Phil Budden and Associate Dean of Innovation Fiona Murray out of MIT, and their Regional Entrepreneurship Accelerator Leadership ('REAL') system. Our recommendation for an all-hands-on-deck driving force will be to build an Innovative Regional Fintech-oriented Entrepreneurship Ecosystem.

We will begin by clarifying a few things about how we define things here at MIT. It is our belief at this institution that innovation is defined as the process of taking ideas from inception to impact. This definition is far from what we tend to believe innovation is. If one reads into this definition carefully, one can find out that innovation does not need to be an original idea but instead it relies more on the execution of an idea and making it impactful. At MIT, we also divide startups into two very distinct categories.

1. Small and Medium-sized Enterprises (SME)
2. Innovation Driven Enterprises (IDE)

The graph below better exemplifies the distinction between the two:



Source: Regional Entrepreneurship Acceleration Leaders. MIT. (Murray & Budden, 2017)<sup>54</sup>

<sup>54</sup> Murray & Budden, A systematic MIT approach for assessing ‘innovation-driven entrepreneurship’ in ecosystems (iEcosystems)

As one can see, the difference between the two is their growth perspective. SMEs can be better exemplified by businesses like restaurants, barber shops, local players, and others. IDEs, however, are companies that eye massive scale in their near future. The downward slope at the beginning is because profit is sacrificed initially at the expense of future exponential growth. Large investments are made into product development, and market segmentation – the idea behind this investments is to create large innovative companies that target scale and are not afraid to innovate.

A valid question would then be, why should we focus on IDEs? Well, evidence out of 15 OECD countries for 2001- 2011 shows that young business play a crucial role on employment creation, even during the financial crisis in the U.S., young businesses reported a net growth in employment creation (Moretti)<sup>55</sup>. Also, IDEs tend to drive significant innovation since they usually aim to hit the ball out of the park. Again, their incentive is not to generate profit in the short run; instead an IDE is willing to sacrifice short-term gain for long-term exponential growth, the perfect recipe for innovation.

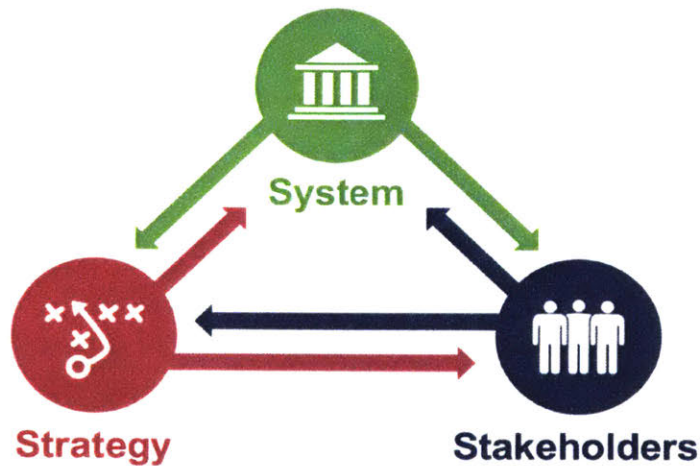
Once we have defined innovation and determined the importance of IDEs, we must understand the correct approach to implement these ecosystems that will drive IDE creation successfully.

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<sup>55</sup> Moretti, Mariner Books, The New Geography of Jobs.



## MIT's Approach to Regional Entrepreneurship Acceleration Leadership

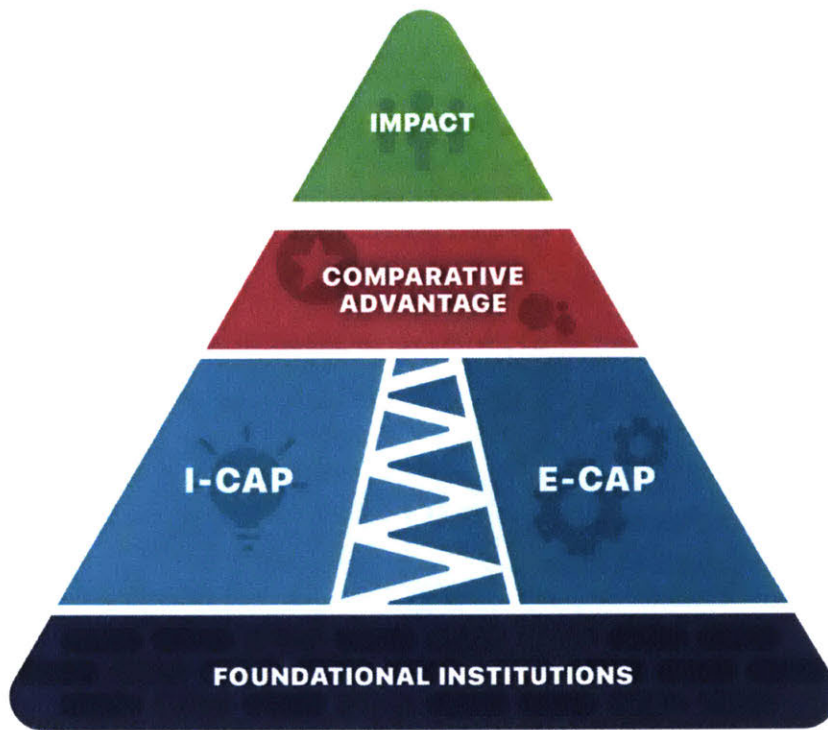


Source: Regional Entrepreneurship Acceleration Leaders. MIT. (Murray & Budden, 2017)<sup>56</sup>

Again, according to the successful model designed at MIT, three main pillars need focus. System, Strategy, and Stakeholders. We understand System as the one taken in our MIT approach. A 'system' therefore has four key components:

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<sup>56</sup> Murray & Budden, A systematic MIT approach for assessing 'innovation-driven entrepreneurship' in ecosystems (iEcosystems)



Source: Regional Entrepreneurship Acceleration Leaders. MIT. (Murray & Budden, 2017)<sup>57</sup>

This system is crucial to enable long-term success and build of IDEs. The Innovative Capacity (I-CAP) and Entrepreneurial Capacity (E-CAP), rely on five main system inputs:

I-CAP	Input	E-CAP
Educational Loans and Funding, Non-Compete Agreements, Visa Policy, NDA's	<b>Human Capital</b>	Ease of Doing Business rules, NCA's, Visas

<sup>57</sup> Murray & Budden, A systematic MIT approach for assessing 'innovation-driven entrepreneurship' in ecosystems (iEcosystems)

R&D Subsidies and Tax Credits	<b>Funding</b>	Tax policies for Early Stage investors, rules for pension funds, legal structure of philanthropy
Structure & ownership of infrastructure, incentives for its creation, e.g., commitments to "big science."	<b>Infrastructure</b>	Rules shaping rental of commercial real-estate, rules on siting of manufacturing facilities.
Policies for procurement of innovations or working with government	<b>Demand</b>	Policies for procurement regarding small businesses
Ownership of IP from Universities	<b>Culture and Initiatives</b>	Rules around bankruptcy

Source: Regional Entrepreneurship Acceleration Leaders. MIT. (Murray & Budden, 2017)<sup>58</sup>

The strategy part of this ecosystem is the most self-explanatory one. Change can only be possible through a well-defined strategy. According to the REAL team, these are the required considerations to implementing a strategy efficiently:

- Referred to by OECD & by US EDA as “regional innovation strategies”;
- Build on strengths & aims to overcome weaknesses;
- Often highly political as they involve hard choices;
- A mix of policy and programs (e.g., EDA’s i6 grants)

<sup>58</sup> Murray & Budden, A systematic MIT approach for assessing ‘innovation-driven entrepreneurship’ in ecosystems (iEcosystems)

Now, a country like Panama must define their regional identity to define their strategy. We propose to establish themselves as a digital and financial hub for the region (Central America and Andean Countries). This concept will not go without competition, Colombia has already voiced their interest in becoming such for the region, and Costa Rica is also attempting to do so. Fortunately for Panama however, these countries have done little other than express their desire, also, fortunately, both countries are neighboring countries to Panama; therefore, they could work together to jointly implementing this hub, thus creating immense value for their markets, the region and capturing the value together.

On the Stakeholders part of the REAL model there are five main participants; a) Entrepreneurs; b) Risk Capital; c) Corporate; e) Government; f) University. As we look at both the system and the stakeholders strategically, in which comparative advantages can Panama build on? The country has the significant capital for investment, an economy that has been growing on an average above 7% for the past decade has a myriad of success stories and home-grown corporations with large amounts of cash to invest. Companies like Copa Airlines, Banco General, Aseguradora Assa, are just a few examples of companies that have reported double-digit growth in the aviation, banking, and insurance industry respectively – industries that would benefit significantly from innovative technologies brought forth by fintech entrepreneurs. The regulatory structure is also being built, as stated in the first part of our paper, a bill currently in the National Assembly is in line to enable the Government as an active stakeholder.

Building on the strength of capital and corporations could make up for the lack of Entrepreneurs and the low quality of education; the country has suffered from over the past few decades. Building an

ecosystem around the suggested System, with a clear Strategy to become the regional leader in the financial and fintech industry, and leveraging their Stakeholders draws a clear path to have the required driving force to bring about change.

We must note a few things about entrepreneurship. First, to say that the country does not have a driving entrepreneurial ecosystem is correct; however, that does not mean it is inexistent. The City of Knowledge is the country's most well-known entrepreneurial force. Unfortunately, after evaluating the output, we must conclude that success stories are few and far between, and local specialists that were interviewed for this paper agree. In their assessment, the current leadership while well intended lacks the drive and world understanding required to build a fast-paced, innovative ecosystem.

One a second note, we must talk about Panafintech, a not-for-profit organization that focuses on driving Fintech companies in the country. Talking to one of its members, Felipe Echandi, co-Founder of the Venmo-like app, Cuanto, the primary challenge for these companies to thrive is the lack of a willingness to invest, the lack of a robust entrepreneurial ecosystem that incubates and accelerates and the lack of regional for expansion. Panama, a country with roughly 4 million inhabitants, cannot by itself build an IDE; therefore any incubator, accelerator or entrepreneurial ecosystem must have in mind that to build IDEs there must be a local play first but later a regional expansion in both Central America and the Andean countries.

## **Recommendation.**

We strongly suggest that the country focuses on funding and building an Innovative Regional Fintech-oriented Entrepreneurship Ecosystem. Entrepreneurship on itself can be too broad, especially for a country that has failed to drive it successfully, therefore, taking the entrepreneurial approach of a beachhead market ('BHM') – Panama should focus on entrepreneurship on the Fintech sector and aim to become the leaders of the Central American and Andean region. This could be achieved by following the suggested MIT REAL framework.

Regarding Risk Capital, the country should also include tax incentive for large companies, e.g., Copa Airlines, Banco General, Banistmo, Assa, to invest in this ecosystem and its startups. The government should also provide incentives for these companies to promote challenges funded by these institutions. A yearly challenge for small companies to build a product that will drive financial inclusion, or a challenge that solves the markets inability to grow their consumer credit card market from the long penetrated 10%. Challenges that are funded by universities like Universidad Tecnologica or Universidad de Panama; private schools like USMA or Universidad Latina. Universities with significant budgets to invest but a lack of places to do so.

By implementing this fintech-oriented ecosystem, and doing so through the REAL framework, the country will have its all-hands-on-deck driving force that could drive significant innovation in the country.

By impulsing and funding Cuanto (the Venmo-like App) or similar companies, the nation could achieve significant progress regarding financial inclusion.

According to the authority of public services<sup>59</sup> ('ASEP'), there are 146 active cell phone lines for every 100 Panamanians. Funding and driving a company like this could represent a quick, efficient and cheap way to drive financial inclusion. It could also mean that once citizens are joining this system, government subsidies could migrate from being deployed manually via checks on to digitally via an app. It is imperative in our assessment that the country aims to build this ecosystem as its driving force.

### **A booming private sector, driving internet and infrastructure.**

Much of what we have written so far about Panama has addressed what we call the direct involvement of the sector. A sector that has seen its innovative capacity stifled by a company with all of the market power, and a market that has yet to overcome its inability to financially include its population through innovative financial solutions. As we have been building on, however, there is a clear path for how to catch up for the time lost and to leapfrog into regional leadership. The question then is, does Panama have enough indirect involvement to serve as a standing base for the development of the fintech industry?

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<sup>59</sup> Diario La Prensa, 5.9 millones de líneas activas, [https://impresa.prensa.com/economia/millones-lineas-activas\\_0\\_4967503280.html](https://impresa.prensa.com/economia/millones-lineas-activas_0_4967503280.html) (Diario La Prensa, 2018)

The first encouraging data point is the one provided a few paragraphs above; there are 146 active cell phone lines for every 100 Panamanian citizens. According to the World Bank's data repository, as of 2016, 54% of the population in Panama was using the internet, this number compares to China, it dwarfs India's penetration however it lacks in when compared to OECD average of 78%. The exciting part is that the nation was only at 11% by 2005 and has seen exponential growth since. The country, in turn, has to also work on its internet penetration, Telcom companies like Cable and Wireless (partly owned by the government), Digicel, Claro, and Telefonica claim coverage in over 90% of the territory while covering nearly 100% of the population. We can conclude then, that the country has sufficient indirect infrastructure to build on this industry, mainly when looking at the percentage of the population with access to electricity which according to the World Bank data repository is at 93%.

### **Recommendation.**

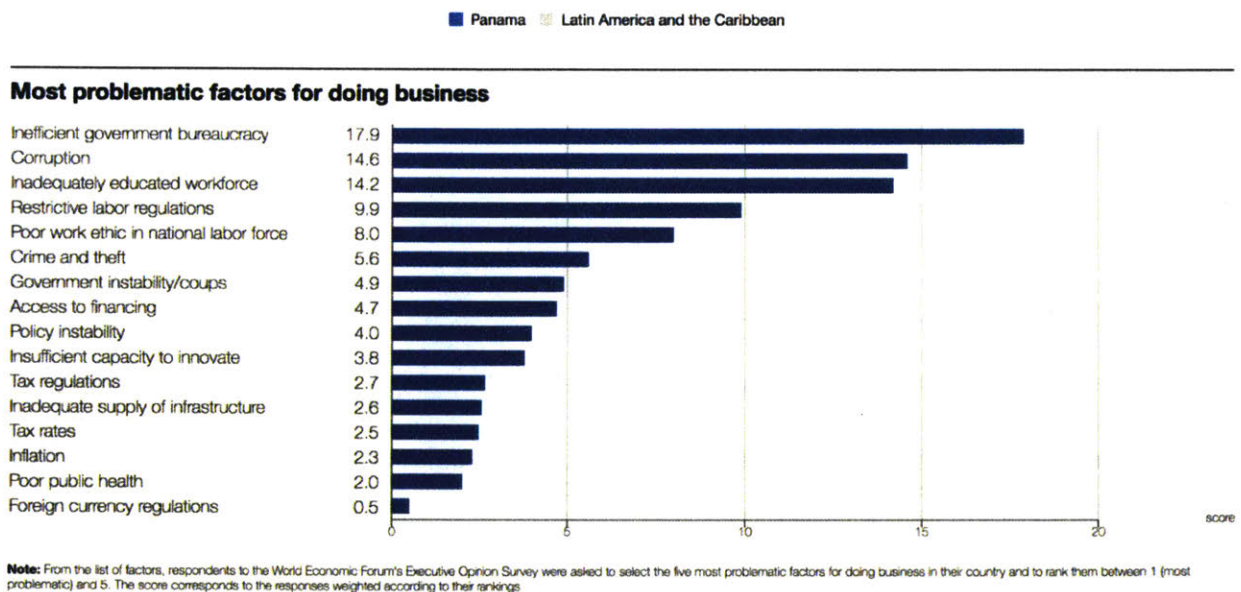
Should the country incentivize the inclusion of cheaper cellphones like India is doing to drive both internet access and mobile subscriptions? Should the country, through its partly owned operator, Cable and Wireless, subsidize phones for the population?

We are particularly fond of the latter proposal because of its impact. Subsidized phones could come with preloaded Venmo-like apps to drive utilization and inclusion. Upon delivery of the phones, an account could be created, the customer could be onboarded, and instructed subsidies will be disbursed through that tool. This should be part of a national agenda.



## Factor Conditions. Access to high-quality human resources.

According to the World Bank's Global Competitive Index<sup>60</sup>, Panama's third most problematic factor for doing business is its inadequately educated workforce. Such hindrance then restricts the supply of talented personnel for the country to innovate and move forward. As always, then, a question must be answered, how can Panama improve its education, which takes a significant amount of time, while being able to supply its market with a talented workforce?



Source: *Global Competitiveness Index*. (The World Bank, 2018)

The current government has reported recent progress. For starters, the government announced an investment of \$200 million to build a new Technical Institute for Superior Education ('ITSE'). The primary focus of this institute according to its Mission statement<sup>61</sup> will be to promote "ethics,

<sup>60</sup> The World Bank, Global Competitiveness Index, <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>

<sup>61</sup> Instituto Tecnico Superior Especializado, Mision, <http://www.itse.ac.pa/sobre-itse/>

responsibility, critical thinking, proactivity and an entrepreneurial spirit.” Also, the country has agreed to return to PISA rankings for primary and secondary education. A ranking the country decided to exit in the past decade after consistently performing and ranking poorly.

These two initiatives should help impulse education long-term; however, more reform must still be made. The nation does not offer programs in Science, Technology, Engineering, and Mathematics (‘STEM’), nor does it incentivize it. STEM careers have proven critical for the evolution of advanced countries and fast-growing developing nations. Building reform that will create a STEM path is required for advancement.

In the meantime, Panama then has to look at its immigration policy. As Professor Ricardo Hausmann from the Center for International Development said recently at the World Economic Forum “Part of the secret of why Panama has grown so much, is that by Latin-American standards, they have a relatively open immigration policy, by Canadian standards or Australian standards, they have a disastrous immigration policy... and we have done studies to show that the productivity of the locals is dramatically increased when they work with foreigners.” By taking this assessment from Hausmann, we can then suggest that Panama should be continuing to strengthen their immigration policies to ensure talented people move into the country thus benefiting the locals and the economy in both the short and long run.

## **Recommendation.**

It is crucial for Panama to continue to develop its educational system at the primary, secondary and higher levels. Mainly the country has to focus on developing reform that can impulse STEM fields in the nation.

On top of this, the immigration policy must be adapted. In an analysis performed by a local news station<sup>62</sup>, it was found that Panama restricts, by law, fifty-six jobs functions exclusively for Panamanian nationals. These jobs include educators at all levels, chemists, ten different branches of engineering, and economists. In other words, if Nobel Prize-winning professors wanted to move to Panama to teach, they would be unable too. Having such restrictions in crucially necessary fields hinders the countries competitiveness and ability to produce a more highly educated workforce. As the country advances, the need to provide incentives to top educators and researchers to move to Panama, and both produce and educate the locals is of the utmost importance.

Only this way will the country be able to continue to develop the infrastructure required to become a regional leader in the fintech and payment fields.

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<sup>62</sup> Televisora Nacional, LISTADO DE PROFESIONES PROTEGIDAS Y RESERVAS PARA PANAMEÑOS POR NACIMIENTO O POR NATURALIZACIÓN, [https://www.tvn-2.com/2017/09/05/Profesiones\\_protegidas\\_en\\_Panama.pdf?hash=8ebecc18ad9a1faf97cd283176fecfc9b2e81751](https://www.tvn-2.com/2017/09/05/Profesiones_protegidas_en_Panama.pdf?hash=8ebecc18ad9a1faf97cd283176fecfc9b2e81751)

## **V. Conclusions**

A regulatory environment for a free and enabling market; an inclusive and accessible identity for all, a digital identity; an all-hands-on-deck driving force; a booming private sector, driving internet and infrastructure; and Factor Conditions, access to high-quality human resources are the five lenses for which a market should be analyzed in order to assess the readiness of a country for a digital transformation.

The benefits of this transformation particularly in the financial sector by gradually phasing out cash cover many areas, ranging from the consumers, the government and the business sector. As it has been proven by the Indian experiment through demonetization and a broad set of initiatives and activities to drive a cash-lite environment, this transformation will provide significant benefits to every area; however, it requires a disciplined and systematic approach to do so.

In this study, we provide a model to analyze a market, identify the strengths to be leveraged and opportunities to be built on to drive a transformation. We were able to build this model after carefully assessing the Indian experiment and then modeling it on the Panamanian market. We found fascinating that despite the differences in each economy the model provided an accurate guide to suggest a transformation.

The analysis made is far from just an academic exercise. The recommendations made for the Panamanian market are actionable and implementable. This document also looks to serve as a guide of specific actions the country should take to drive financial inclusion via a digital and cashless evolution.

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