



# MasterCard Mexico: Measuring the Progress of Financial Inclusion

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Contents

Acknowledgements ..... 2

Executive Summary ..... 3

MasterCard: World Beyond Cash ..... 4

    Financial Inclusion Initiatives ..... 5

Evaluation Questions ..... 7

The Model ..... 8

    Key Assumptions ..... 9

    Access ..... 9

        Transactions ..... 9

        Savings ..... 10

        Credit ..... 11

        Key Performance Indicators for Access ..... 13

    Usage ..... 14

        Key Performance Indicators for Usage ..... 15

    Short to Medium Term Outcomes ..... 16

        Key Performance Indicators for Short to Medium Term Outcomes ..... 17

    Long Term Outcomes ..... 20

Conclusion ..... 21

Appendices ..... 22

    I. KPI Summary Table ..... 22

    II. Other MasterCard Government Financial Inclusion Initiatives ..... 23

        The Bangladesh Partnership ..... 23

        The South Africa Partnership ..... 23

        The Nigeria Partnership ..... 24

    III. Data Sources ..... 26

Bibliography ..... 27

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## Executive Summary

In an effort to advance shared prosperity in line with the United Nations' Sustainable Development Goals (SDGs), MasterCard has pledged to leverage its expertise as an enabler of financial transactions to reduce inequality and eliminate poverty — making a bold commitment to reach 500 million people previously excluded from financial services by 2020. MasterCard would like to better understand how the full pathway to financial inclusion — involving savings, credit, transactions, and insurance — can be utilized to increase shared prosperity. Mexico has been chosen as a pilot market for MasterCard's financial inclusion projects. This paper proposes a replicable model for utilizing Key Performance Indicators (KPIs) to adequately measure the extent and effectiveness of MasterCard's financial inclusion mission. It also provides indicators for measuring the short to medium term outcomes of MasterCard's initiatives.

## MasterCard: World Beyond Cash

*“Together, we can be agents of transformative change who create more inclusive economies and more empowered populations.”<sup>1</sup>*

*- Ajaypal Banga, President & CEO of MasterCard*

In September 2015, the United Nations General Assembly passed the Sustainable Development Goals (SDGs). Building upon the previous fifteen years of the Millennium Development Goals (MDGs), the SDGs provide a clear plan of action for “people, planet, and prosperity.”<sup>2</sup> Challenges to achieving sustainable development are widely acknowledged to be complex and interrelated, requiring integrated solutions and partnerships across sectors – government, non-governmental organizations and the private sector.

With the passage of the SDGs, it appears that there is undeniable consensus among international actors that socially-inclusive financial models are the key to bringing the world’s underserved into the folds of the mainstream economy, and the central means of improving economic growth overall resulting in better conditions for humanity. MasterCard, an enabler of financial transactions, sees itself as an integral player to bringing about actionable, measurable change and progress towards achieving the SDGs.

MasterCard’s support for the SDGs is based on the theme that “advancements in payment technology can build more self-empowered lives,”<sup>3</sup> and that MasterCard has a crucial role to play in achieving the SDGs related to poverty reduction (SDG 1) and economic growth (SDG 8) through its financial inclusion projects. Financial inclusion is the expansion of participation in the financial system – including growing businesses, investing in education, managing risk, or absorbing financial shock. It encompasses tools which provide productive investment and consumption smoothing to individuals traditionally excluded from using financial instruments. Financial inclusion has been critical to reducing poverty and achieving inclusive economic growth as it is the key process by which untapped markets are incorporated into existing financial consumer bases.<sup>4</sup> MasterCard also believes that it can help scale and implement the SDGs through effective public-private partnerships with governments and other private or public sector players, leveraging experience and resourcing strategies from these partnerships (SDG 17).<sup>5</sup>

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<sup>1</sup>“World Bank Group and a Coalition of Partners Make Commitments to Accelerate Universal Financial Access,” *The World Bank*, April 17, 2015. <http://www.worldbank.org/en/news/press-release/2015/04/17/world-bank-group-coalition-partners-make-commitments-accelerate-universal-financial-access>

<sup>2</sup> Sunil Gupta, R. Lal, and N. Kindred. “MasterCard: Driving Financial Inclusion.” *Harvard Business School*, 2014

<sup>3</sup> Ryan Erenhouse. “How MasterCard is Working Towards the Sustainable Development Goals.” October 12 2015. <http://newsroom.mastercard.com/2015/10/12/how-mastercard-is-working-towards-the-sustainable-development-goals/>

<sup>4</sup> “Measuring Financial Inclusion Around the World.” The Global Findex Database 2014, April 2015.

<sup>5</sup> “Sustainable Development Goals.” <https://sustainabledevelopment.un.org/?menu=1300>

## Financial Inclusion Initiatives

Since 2010, MasterCard has partnered with governments to develop over 200 financial inclusion programs in 40 countries, reaching 350 million underserved people. The appointment of Ajaypal Banga as MasterCard's CEO in 2010 marked an important point in the company's efforts to promote financial inclusion. MasterCard's financial inclusion programs revolve around the idea of a "wallet" for the underbanked<sup>6</sup> and unbanked<sup>7</sup> with its CEO leading the efforts to promote partnerships with governments around the world to expand access to financial services.<sup>8</sup>

According to Banga, "30% of the money that flows to this population comes from a government entity, 30% comes from part-time jobs, and 40% comes from overseas remittances." Given that 30% of the transactions originate from a single source, the government, MasterCard sees this as an opportunity to leverage its expertise and partner governments to bring access to banking services to the bottom 40% of income earners in a country.

As a payment enabler, MasterCard focuses on making in-kind governmental distribution programs digital. These programs increase the safety, transparency and efficiency of delivering benefit payments to beneficiaries and reduce the costs associated with beneficiaries travelling to collect their cash payouts. The use of electronic transactions also provides considerable improvements in fraud protection, where the beneficiaries register using both fingerprint and voice identification.<sup>9</sup>

While this paper focuses on partnerships with governments, it is also important to note that another key element for furthering financial inclusion and economic growth is private sector engagement.<sup>10</sup> In order for financial development to be sustainable, "services have to be viewed as valuable by consumers and

### Case Study: BANSEFI

In 2014, MasterCard and BANSEFI, the Mexican Government's Financial Institution, announced a partnership to distribute social benefits through a cashless system to 6.5 million participants. The majority of the individuals enrolled in BANSEFI are women, and MasterCard hopes that by enrolling them in an electronic payment system, the recipients will have access to more secure, efficiently-distributed benefits. MasterCard also believes that by enrolling recipients in an electronic bank account, they can continue on the path to full financial inclusion. The program was successfully rolled out and won the *Best Government Benefits Delivery* under the *Prepaid* category at the 2016 Pay Awards.<sup>10</sup>

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<sup>6</sup> Bank account holders with no access to banking services including savings and credit as well as other services offered by conventional commercial banks.

<sup>7</sup> Federal Deposit Insurance Corporation (FDIC) describes unbanked as adults without an account at a bank or other financial institution.

<sup>8</sup> Sunil Gupta, R. Lal, and N. Kindred. "MasterCard: Driving Financial Inclusion." *Harvard Business School*, 2014

<sup>9</sup> Ibid.

<sup>10</sup> Brittany Berliner. "MasterCard Wins 16 Best in Category Awards at 2016 Pay Awards! - InvestAdvocate." InvestAdvocate. March 23, 2016. <http://investadvocate.com.ng/2016/03/23/mastercard-wins-16-best-category-awards-2016-pay-awards/>.

as economically viable by providers.”<sup>11</sup> The private sector actors include banking agents, cash-in/cash-out points of services and a payment infrastructure that connects these agents to the broader financial system and the government social security network.

As part of the company efforts to “advance equitable and sustainable growth”, MasterCard also established an independent subsidiary, the Center for Inclusive Growth, which combines data, expertise, technology and philanthropic investments to empower different stakeholders (NGO’s, academia, governments, and businesses) on the front lines of inclusive growth. The Center works to break down silos across sectors and move ideas into action by supporting research to inform decision-making. The Center makes data analytics more accessible to NGOs so that they can provide better and more impactful services, and delivers market-based tools that allow microentrepreneurs to enter formal economies.<sup>12</sup>

To further advance its commitment to financial inclusion and the SDGs, MasterCard seeks to expand on its existing Key Performance Indicators (KPIs) to better track the impact of their financial inclusion efforts. The KPIs in this paper expand beyond GDP-indicators given the limits of GDP as an indicator of inclusive economic growth and social progress.<sup>13</sup> There has been debate about the relevance of GDP indicators as measures of societal well-being as they do not show the direct influence or impact on an individual’s lives or on the society as a whole.

#### **Case Study: Telecomm-Telegrafos**

Telecomm-Telegrafos, a decentralized agency of the Mexican government, disperses 30% of government transfers to rural populations. In 2012, Telecom partnered with MasterCard in order to distribute free cell phones and debit cards in the hopes of facilitating peer-to-peer transfers. This pilot program reduced the amount of cash that Telecomm needed to operate their office in rural areas and saved users valuable time and transportation costs. A study conducted by the Consultative Group to Alleviate Poverty (CGAP) found that pilot users living outside of Santiago Nuyoo had saved approximately 32 to 192 pesos of transportation costs per month given that they no longer needed to travel to financial service access points 1 to 2 times per month. This is in comparison to an average daily wage of 70 pesos.<sup>14</sup>

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<sup>11</sup> Tilman Ehrbeck. "The Next Financial Inclusion Challenge: Private Sector Leadership." CGAP. October 23, 2013. <http://www.cgap.org/blog/next-financial-inclusion-challenge-private-sector-leadership>.

<sup>12</sup> “Inclusive Growth: Answering a Global Challenge”. MasterCard Center for Inclusive Growth.

<sup>13</sup> Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi. “Report by the Commission on the Measurement of Economic Performance and Social Progress.”

<sup>14</sup> Jose Maria San Juan and Alessandra Valenti. "Telecomm-Telégrafos: Connecting the Disconnected Rural Population." IBGC Working Paper 13, no. 04 (October 2013).

## Evaluation Questions

MasterCard recognizes that evaluating financial inclusion initiatives is essential. This paper proposes a model with KPIs that MasterCard and its partners can use to track and measure the impact of financial inclusion initiatives. The model aims to show the impact of financial inclusion initiatives on the underserved.

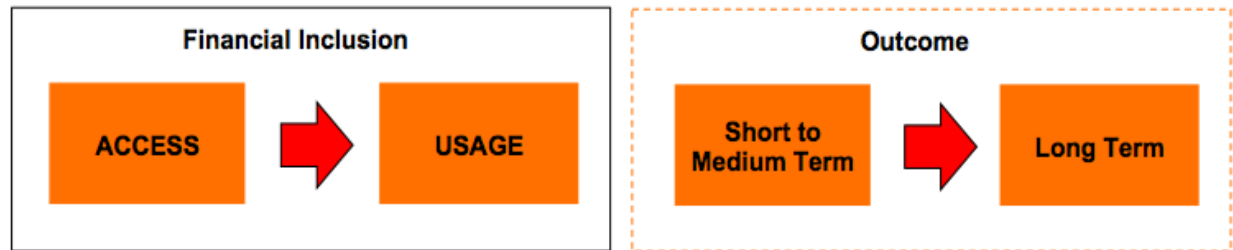
MasterCard seeks to understand the following key questions. These questions form the basis of the model proposed in this paper that will be elaborated in the next section:

1. Are financial products being accessed and used?
2. Are the previously underserved able to improve their well-being once they have access to and utilization of financial services?

The first question can be more easily understood with data captured through MasterCard's regular business metrics. The second question is much more difficult to understand and to measure due to a lack of formalized metrics and relevant data. Data to better understand the well-being outcomes of MasterCard's financial inclusion work should be supplemented with data from partner organizations and government agencies.

## The Model

Figure I: Model for Financial Inclusion



The model begins with the two pillars of financial inclusion – access and usage. Access is intended to measure the availability of financial institutions and instruments to low-income individuals. Usage measures the extent to which low-income individuals effectively utilize these available financial institutions. Access and usage are discussed in this paper in relation to the following four financial products and services:

- i. Transactions
- ii. Savings
- iii. Credit
- iv. Insurance

It is through the access and usage of financial products and services that the previously unbanked and underserved can be given the opportunity to participate in the mainstream economy. Without access to financial products and services, people are more at risk of being victims of crime and disenfranchisement. By tracking KPIs for the following short to medium term outcomes, MasterCard can critically assess whether financial inclusion initiatives are cultivating results favorable to achieving programmatic goals of advancing financial inclusion and inclusive growth:

- i. Higher household consumption
- ii. Increased household wealth
- iii. Better education for children
- iv. Women's empowerment
- v. Healthier people
- vi. Safer societies

## Key Assumptions

The model also hypothesizes that the short to medium term outcomes are expected to lead to inclusive economies, under the following assumptions. First, it assumes that access to mainstream financial services leads to usage when the financial products meet the unique needs of the previously underserved. Second, governmental partners facilitate access and usage by providing legal protections and infrastructure. Third, there are also global macroeconomic factors that could affect the success of financial inclusion programs leading to well-being outcomes. Lastly, there is little evidence supporting causal links between financial inclusion and well-being outcomes. While there are challenges in generalizing KPIs and comparing them across geographies given differences in local contexts, there is value in developing expertise and learning from previous programs.

## Access

In our model, access is the entry point for the unbanked. Without a bank account, individuals will not be able to take advantage of the full array of financial products and services that will lead to their inclusion in the financial sector. The World Bank states that “emerging evidence indicates that access to financial services through formal accounts can enable individuals and firms to smooth consumption, manage risk, and invest in education, health and enterprises.”<sup>15</sup> In our model, both access and usage are necessary in order to lead to the short to medium and long term outcomes described by the World Bank.

Encompassed within access are four components – transactions, credit, savings and insurance (detailed below). Research has shown that these four components, when used in combination, can set individuals on the path to full financial inclusion and achieve the short to medium and long term outcomes described later in this paper.<sup>16</sup> Thus, we recommend that MasterCard measure its progress in increasing access by focusing on KPIs related to these four components.

### *Transactions*

Transactions can be defined as formalized channels for the movement of money such as bank accounts and payments. Payment and related services are key components of financial services – they facilitate access to and efficient provision of financial services given that most savings, credit and investments are tied or linked to transaction accounts. In addition, electronic payment services address the limitations of cash as a payment instrument. This provides a support infrastructure for sustainable economic growth and reducing poverty in a country.

Access to transactions is seen by many leading international institutions as the first step on the path towards full financial inclusion. The World Bank’s Country Director for South Asia has stated that poverty

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<sup>15</sup> “Financial Inclusion Overview.” The World Bank. April 22, 2015.  
<http://www.worldbank.org/en/topic/financialinclusion/overview#1>.

<sup>16</sup> Kathleen Odell. “Measuring the Impact of Microfinance.” The Grameen Foundation. 2015.  
<https://grameenfoundation.app.box.com/MeasuringMicrofinanceFuture>.

is reduced when people are given access to the banking system,<sup>17</sup> and the World Bank in a recent report explained that “a transaction or deposit account can be the stepping stone to full financial inclusion.”<sup>18</sup> The Gates Foundation also focuses on moving away from cash transactions as a strategy to incorporate the unbanked into full financial inclusion.<sup>19</sup>

This also ties back to MasterCard’s thesis that transactions, through opening a digital bank account, are the starting point towards individuals having “full financial inclusion.” As a MasterCard Advisors team explained, “financial inclusion is a progression with payments as the optimal entry point.”<sup>20</sup> The idea that financial inclusion starts with increased access to transactions is a component of our proposed Financial Inclusion model (See Table I).

Given that governments initiate a large proportion of payments and these tend to be recurring payments, it would be more efficient to process these payments via an electronic payment system. The adoption of transaction accounts not only benefits the individuals that become financially included, but also the national payments infrastructure and ultimately the economy. In keeping with this concept, MasterCard has formed several key partnerships in Mexico in order to enable the unbanked to open bank accounts and begin making transactions, with the idea that increased bank accounts will empower the poor and put them on a path towards full financial inclusion. In Mexico, MasterCard has focused on government inflows, also known as “social transfers.” In its current strategy for financial inclusion, digitizing these government payments will introduce the unbanked to financial services and enable them to continue on the path towards full financial inclusion.

### *Savings*

Research shows that the poor use savings accounts to help buffer shocks and smooth their consumption. There is also evidence that even very poor households are able to increase their savings without reducing household spending. Savings may also have additional positive externalities, such as empowering women and strengthening community safety nets.<sup>21</sup>

Of the four financial products and services in the model, there is the most evidence that savings on its own is the most promising means of decreasing the incidence and severity of poverty. Poor households are particularly vulnerable to “shocks” outside of their control, including health expenditures, a bad

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<sup>17</sup> “Access to Financial Services – A Key to Lifting People Out of Poverty.” August 20, 2015. The World Bank. <http://www.worldbank.org/en/news/press-release/2015/08/20/access-to-financial-services-key-to-lifting-people-out-of-poverty>.

<sup>18</sup> “Financial Inclusion Overview.” The World Bank. April 22, 2015. <http://www.worldbank.org/en/topic/financialinclusion/overview#1>.

<sup>19</sup> “Financial Services for the Poor: Strategy Overview.” Gates Foundation. <http://www.gatesfoundation.org/What-We-Do/Global-Development/Financial-Services-for-the-Poor>.

<sup>20</sup> Amit Jain, Olga Zubenko, and George Carotenuto. “A Progressive Approach to Financial Inclusion.” MasterCard Advisors Global Insights. October 2014. [http://www.mastercardadvisors.com/financialinclusion/MasterCardAdvisors\\_Financial\\_Inclusion\\_2014.pdf](http://www.mastercardadvisors.com/financialinclusion/MasterCardAdvisors_Financial_Inclusion_2014.pdf)

<sup>21</sup> Kathleen Odell. “Measuring the Impact of Microfinance,” The Grameen Foundation. 2015. <https://grameenfoundation.app.box.com/MeasuringMicrofinanceFuture>.

harvest, or economic recession. Research shows that these shocks are a main reason why households are pushed into poverty. Globally, healthcare payments alone force 100 million households into poverty.<sup>22</sup> Therefore, savings are a critical component of ensuring that households that are at or right above the poverty line are not pushed into poverty due to illness or other uncontrollable circumstances.

### *Credit*

Credit is a loan that is distributed to individuals who have bank accounts. Credit is intended to enable families to invest in an asset or their businesses. In the developing world context, where nonprofit organizations, such as Grameen Bank, have been operating, credit is typically disbursed in small amounts and called “microcredit,” at low interest rates.<sup>23</sup>

As Angelucci et al demonstrate in a 2015 evidence-based microcredit intervention in Mexico, access to credit is associated with an increase in business revenues and expenses, but not profits or household income<sup>24</sup> and other studies on microcredit also found little to no effects of credit on household income.<sup>25</sup> In addition, credit does not seem to have a measurable effect on business profits, although it does appear to enable entrepreneurs to launch and invest in their businesses.<sup>26</sup>

### *Insurance*

There have been relatively few academic studies on the impact of insurance for the poor. The studies that have been conducted focus mainly on health insurance’s impact on out-of-pocket spending and utilization of health care services. A 2014 experiment in Mexico showed that poor households with health insurance spent less on “catastrophic health care” as well as out-of-pocket expenditures.<sup>27</sup> Regardless of the lack of rigorous evidence, experts are in agreement that insurance is a critical component of financial inclusion for the poor because, similar to savings accounts, insurance for health or crops can enable the poor to withstand shocks that otherwise would drive them deeper into poverty.

In addition to savings, credit and insurance, mobile money is becoming a powerful tool for socio-economic development, advancing financial inclusion and enhancing access to basic services.

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<sup>22</sup> Khurshid Alam, and Ajay Mahal. “Economic Impacts of Health Shocks on Households in Low and Middle Income Countries: A Review of the Literature,” *Globalization and Health* 10 (2014): 21.

<sup>23</sup> “Microcredit.” Grameen Bank.

[http://www.grameen.com/index.php?option=com\\_content&task=view&id=796&Itemid=763](http://www.grameen.com/index.php?option=com_content&task=view&id=796&Itemid=763).

<sup>24</sup> Manuela Angelucci, Dean Karlan, and Jonathan Zinman. “Microcredit Impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco.” *American Economic Journal: Applied Economics* 7, no. 1 (January 2015). <https://www.aeaweb.org/articles?id=10.1257/app.20130537>.

<sup>25</sup> Maia Yang, T. D. Stanley. “Micro-Credit and Income: A Literature Review and Meta-analysis.” *Bulletin of Economics and Meta-Analysis*.

<sup>26</sup> Manuela Angelucci, Dean Karlan, and Jonathan Zinman. “Microcredit Impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco.” *American Economic Journal: Applied Economics* 7, no. 1 (January 2015). <https://www.aeaweb.org/articles?id=10.1257/app.20130537>.

<sup>27</sup> Omar Galárraga, et al. “Health Insurance for the Poor: Impact on Catastrophic and out-of-Pocket Health Expenditures in Mexico,” *The European Journal of Health Economics* 11.5 (2010): 437–447.

MasterCard has observed relatively high usage of mobile banking networks in regions such as Latin America, Africa, and the Middle East<sup>28</sup>, and by end 2014, there are 255 mobile money services in 89 countries, and mobile money accounts outnumber bank accounts in 16 of these countries.<sup>29</sup> The success of M-PESA in Kenya (see case study) serves as a good case study for mobile money operators' role in advancing financial inclusion, illustrating that mobile transactions would be an important part of assessing MasterCard's electronic banking expansion going forward. It is also useful to note that Mexico (the pilot country) has witnessed high growth and development of new mobile money systems, following a regulatory overhaul allowing telecom companies to become banking agents and open low-value accounts that do not require previous bank account ownership.

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<sup>28</sup> "MasterCard Delivers Online Mobile Banking Innovation to Africa," *PYMNTS.com*, March 4, 2015.

<sup>29</sup> Claire Scharwatt, A. Katakam, J. Frydrych, A. Murphy, and N. Naghavi. "2014 State of the Industry: Mobile Financial Services for the Unbanked," *Mobile Money for the Unbanked*.  
[http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR\\_2014.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf)

## Key Performance Indicators for Access

Opening a bank account is often the first step towards full financial inclusion. Once users have a bank account, they are able to begin participating in a full range of financial activities – transactions, savings, credit, and insurance. For this reason, this paper focuses on KPIs for Access that are primarily related to transactions and bank accounts.

The KPIs developed are drawn from a number of research institutions, such as the Abdul Latif Jameel Poverty Action Lab (JPAL) at MIT, the World Bank’s Global FinDex, and the International Monetary Fund’s recent efforts to define and measure financial inclusion.<sup>30</sup> The KPIs, supported by measurable data obtained internally or from other government data sources and when looked at holistically, will help to provide an accurate picture of MasterCard’s progress in advancing the critical first step in financial inclusion.

**Table I: Key Performance Indicators for Access**

Category	Key Performance Indicator
<b>Transactions</b>	# of bank accounts opened
	# of bank accounts opened by women
	# of mobile money accounts
	# of people who now have access to financial products and services within 5km
	# of points of sale per 100,000 people
	# of remittance transactions
<b>Savings</b>	# of savings accounts opened
	# of savings accounts opened by women
<b>Credit</b>	Avg. amount of credit approved per person
	# of credit cards/debit cards issued
<b>Insurance</b>	# of insurance policies approved

<sup>30</sup> Goran Amidzic, Alexander Massara, and Andre Mialou. "Assessing Countries' Financial Inclusion Standing—A New Composite Index," *IMF Working Paper*, February 2014. <https://www.imf.org/external/pubs/ft/wp/2014/wp1436.pdf>

## Usage

MasterCard defines usage as the “degree to which a product is used.”<sup>31</sup> Fundamentally, usage indicators allow institutions to assess how clients use products and financial services after they have access to them, namely the regularity and duration of use over time.<sup>32</sup> While increased access opens up financial products and services to new global clients, usage ensures that these products and services adequately fulfill the underserved population’s financial needs.

Traditionally, financial institutions have aimed to understand the needs and behaviors of middle and high income clients, who typically aspire to have better housing, invest in businesses, acquire better jobs, and achieve financial stability. In terms of designing financial instruments to increase usage among the underserved, however, banks encounter various barriers. The less affluent typically have irregular incomes and cash flows, often insufficient to meet their own basic needs. They use short-term savings but regularly need to borrow to meet planned expenses. They may rely on a mix of credit and savings to ameliorate shortfalls but not adequately plan (or have the means to prepare) for emergencies.<sup>33</sup>

MasterCard can measure the usage of simple savings plans and short-term credit options to better assess MasterCard’s financial inclusion programs on impoverished segments of the population.

### **Case Study: Mobile Money and Safaricom M-PESA in Kenya**

In 2007, mobile phone giant, Vodafone, and local service provider, Safaricom collaborated to support remittance services through Safaricom’s mobile platform. By end 2011, 15.2 million of Safaricom’s 17 million subscribers were registered for M-PESA. In addition, the percentage of people living on less than \$1.25 a day who use M-PESA rose from 20% in 2008 to 72% in 2011.<sup>34</sup>

M-PESA’s success and reach also incentivized businesses and formal financial institutions to offer complementary services. For example, “Kenyan Central banks and the Family Bank of Kenya now allow for direct transactions to bank accounts from mobile phones, making banks accounts more attractive” and “M-PESA users also have access to over 110 ATMs where they can withdraw money from their mobile account.”<sup>35</sup> M-PESA also collaborated with Equity bank, Kilimo Salama and other private sector partners to offer insurance policies, small scale pension deposit plans and some credit through M-PESA.

M-PESA’s success showed that it is possible for a high penetration of mobile phones and mobile money to be the catalyst of financial inclusion and enable a country to help its large number of unbanked individuals overcome barriers of access to formal institution.

<sup>31</sup> “A Progressive Approach to Financial Inclusion – Middle East & Africa,” *MasterCard*, 2014.

[http://www.mastercardadvisors.com/financialinclusion/Financial\\_Inclusion\\_MEA.pdf](http://www.mastercardadvisors.com/financialinclusion/Financial_Inclusion_MEA.pdf)

<sup>32</sup> “How to Measure Financial Inclusion,” *The World Bank*, February 19, 2015.

<http://www.worldbank.org/en/topic/financialinclusion/brief/how-to-measure-financial-inclusion>

<sup>33</sup> Xavier Faz and Paul Breloff, “A Structured Approach to Understanding the Financial Service Needs of the Poor in Mexico,” *CGAP*, May 2012.

### *Key Performance Indicators for Usage*

Given the unique pattern of the usage of financial instruments by the underserved population as mentioned above, this paper proposes KPIs that measure the frequency and duration of products and services primarily related to transactions as well as the use of credit and debit cards. The KPIs are drawn from various institutions distinguishing the effectiveness of access against usage, such as the World Bank, the Abdul Latif Jameel Poverty Action Lab (JPAL), the Brookings Institution's Center for Technology Innovation, and the Alliance for Financial inclusion.<sup>36</sup>

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<sup>34</sup> Mercy W. Buku and Michael W. Meredith. "Safaricom and M-PESA in Kenya: Financial Inclusion and Financial Integrity." *Washington Journal of Law, Technology & Arts* 8, no. 3 (2013): 377-99.

<sup>35</sup> Michael Hinz. "M-PESA: The Best of Both Worlds" *BBVA Research*, July 2014.

<sup>36</sup> John D. Villasenor, Darrell M. West, and Robin J. Lewis. "The 2015 Brookings Financial and Digital Inclusion Project Report: Measuring Progress on Financial Access and Usage" *Center for Technology Innovation at the Brookings Institution*, 2015.

**Table II: Key Performance Indicators for Usage**

Category	Key Performance Indicator
<b>Transactions</b>	Average number of transactions per month
	Amount of deposits in bank accounts
	# of mobile transactions
	# of withdrawals from bank accounts
	Frequency of debit card use per user per month
	Average value of remittances
<b>Savings</b>	Amount of deposits in savings accounts
<b>Credit</b>	Average amount of loan per person
	Frequency of debit card use per user per month
	Percentage of loans repaid
<b>Insurance</b>	# of insurance policies purchased

The grouping of the usage KPIs parallels that of the access KPIs. The access KPIs provide an aggregate view of the financial products and services that are provided while the usage KPIs focus on the usage of these products and services on an individual level.

### Short to Medium Term Outcomes

Measuring the outcomes of financial inclusion seeks to identify ways that the lives of households and individuals are positively impacted by having access to and using financial products and services. These measurements would validate the hypothesis that increased financial inclusion leads to better household well-being in the short to medium term.

The KPIs were chosen based on metrics used from various evaluations including randomized control trials, quasi-experimental research, and non-experimental research. They reflect a combination of quantitative measures as well as qualitative or anecdotal evidence that demonstrates the impact of financial inclusion initiatives.<sup>37</sup>

<sup>37</sup> Kathleen Odell. "Measuring the Impact of Microfinance." The Grameen Foundation. 2015. <https://grameenfoundation.app.box.com/MeasuringMicrofinanceFuture>.

Short to medium term outcome KPIs are often categorized as household indicators or business indicators. In general, households sell their labor power and strive to smooth life-cycle consumption. As a result, households tend to save in the long-term. Businesses, on the other hand, compete for funds that can be used to invest to grow. Businesses tend to use savings to invest in the long-term.<sup>38</sup> However, the distinction between household and business may be less clear when households act as businesses (e.g. entrepreneurs) and engage in production. This paper focuses on the household as an employee, even if the household is self-employed, and therefore looks at the following six key types of household KPIs:

- i. Higher household consumption
- ii. Increased household wealth
- iii. Better education for children
- iv. Women's empowerment
- v. Healthier people
- vi. Safer societies

The above list of KPIs is not exhaustive but is chosen to adequately represent desired outcomes for financial inclusion initiatives regardless of geographic location. KPIs that are location dependent, such as agricultural KPIs, were excluded for the purposes of this paper.

Data can be found in public data sets including Findex, the IMF Financial Access Survey, the IMF International Financial Statistics and numerous World Bank surveys. More details on data sourcing can be found in the Appendix III.

#### *Key Performance Indicators for Short to Medium Term Outcomes*

- i. Higher household consumption

Household consumption is a strong indicator of well-being as households derive material well-being from the consumption of goods and services rather than the receipt of income.<sup>39</sup> The other benefit of measuring consumption instead of income is that it is less variable than income and provides a more accurate longer-term picture of well-being. Consumption is less affected by seasonality or other variability in income. Also, consumption is less culturally sensitive for survey participants who might not participate in a survey if they perceive themselves as "well off".<sup>40</sup>

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<sup>38</sup> Robert Cull, Tilman Ehrbeck, and Nina Holle. "Financial Inclusion and Development: Recent Impact Evidence." Consultative Group to Assist the Poor, 2014.

<sup>39</sup> C. F. Citro and R. T. Michael. "Measuring Poverty: A New Approach" *National Academy Press*. 2005.

<sup>40</sup> A. Deaton and S. Zaidi. "Guidelines for Constructing Consumption Aggregates for Welfare Analysis." *World Bank LSMS Working Paper*, 2005.

Collecting data on the consumption of various types of goods and services, such as food, durable good, and housing, provides a more in-depth assessment of the welfare effect of a financial inclusion initiative. While an increase in food expenditure can include expenditure of temptation goods, research suggested that an increase in total consumption is often linked to lower consumption of temptation goods in low-income households.<sup>41</sup> Durable good expenditure is directly linked to a long-term welfare increase from the durable good. It has also been shown that “female oriented durables” (washing machines, kitchen appliances, etc.) increase women’s decision making power.

Indicator: Monthly household food expenditure

Data source: Government census data, survey data

Indicator: Monthly household durable good expenditure

Data source: Government census data, survey data

ii. Increased household wealth

Household wealth is measured by amount of assets owned by the household. Wealth is good indicator of long-term welfare as it is less volatile than both income and consumption. It is also indicative of household sustainability as wealth also constrains the ability of a household to start its own business. In addition, a household that spends its wealth on consumption goods increases its current well-being at the expense of its future well-being. Therefore measuring wealth in conjunction with consumption provides an indicative proxy of future well-being.<sup>42</sup>

Indicator: Total household assets

Data sources: Government census data, survey data

While the consumption and household wealth KPIs focuses more on income, it would also be useful to analyze the multidimensional poverty faced by poor people, such as lack of education, inadequate living standard, lack of access to health care, disempowerment, poor quality of work and threat from violence.<sup>43</sup> As such, the next three KPIs look at children education, women empowerment and safe societies.

iii. Better education for children

One of the simplest ways to increase children's education outcomes is to increase primary and secondary school attendance. Often, however, children are forced to work to support household

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<sup>41</sup> Robert Cull, Tilman Ehrbeck, and Nina Holle. "Financial Inclusion and Development: Recent Impact Evidence." *Consultative Group to Assist the Poor*, 2014.

<sup>42</sup> Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi. "Report by the Commission on the Measurement of Economic Performance and Social Progress."

<sup>43</sup> Marta Moratti and Luisa Natali. "Measuring Household Welfare." *UNICEF Office of Research Working Papers*, 2012.

consumption. Some studies have shown a small increase in children's school enrollment is correlated to group lending, however it is difficult to determine causality. While no study has yet shown a negative correlation to increased borrowing, there could be a decrease in children's attendance if loan payments become unmanageable.<sup>44</sup> More data and program experiments are necessary to fully understand the link between financial inclusion and child education.

Indicator: Number of days of school attended

Data source: Survey data

iv. Women's empowerment

Women's empowerment is a pre-condition to addressing challenges such as poverty, inequality, and violence against women. This can be achieved by measures such as engaging women in income generating activities, and providing access to education.<sup>45</sup> There have been studies that show that financial inclusion products and services, especially those targeted specifically at women, may allow women to participate in the labor force and increase their influence on household decisions.<sup>46</sup> While most studies find no significant correlation between financial services and women's empowerment,<sup>47</sup> some studies directly measured women's empowerment by measuring women's decision making (number of decisions that the women have a say in).<sup>48</sup> Continued measurement of the effectiveness of these services is recommended.

Indicator: Percentage of women engaged in income generating activity

Data sources: Survey data

Indicator: Number of household decisions that women make

Data sources: Survey data

v. Healthier people

Indicators to measure health are measured indirectly due to difficulties in determining loss of welfare from illness, and an increase in welfare from alleviation. Therefore the KPI for tracking health outcomes is a subset of consumption. Research practitioners recommend including health expenditures if the

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<sup>44</sup> Kathleen Odell. "Measuring the Impact of Microfinance." The Grameen Foundation. 2015. <https://grameenfoundation.app.box.com/MeasuringMicrofinanceFuture>.

<sup>45</sup> Oriana Bandiera, Niklaus Buehren, Robin Burgess, Markus Goldstein, Selim Gulesci, Imran Rasul and Munshi Sulaiman. "Women's Empowerment in Action: Evidence from a Randomized Control Trial in Africa." June 2015.

<sup>46</sup> Robert Cull, Tilman Ehrbeck, and Nina Holle. "Financial Inclusion and Development: Recent Impact Evidence." *Consultative Group to Assist the Poor*, 2014.

<sup>47</sup> Kathleen Odell. "Measuring the Impact of Microfinance." The Grameen Foundation. 2015. <https://grameenfoundation.app.box.com/MeasuringMicrofinanceFuture>.

<sup>48</sup> Manuela Angelucci, Dean Karlan, and Jonathan Zinman. "Microcredit Impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco." *American Economic Journal: Applied Economics* 7, no. 1 (January 2015). <https://www.aeaweb.org/articles?id=10.1257/app.20130537>.

elasticity of health expenditures with respect to total expenditure is high.<sup>49</sup> These expenditures include preventative and curative health services, family planning activities, and nutrition activities.

Indicator: Household expenditure on preventive health products

Data source: Healthcare centers, Hospitals

vi. Safer societies

Safer societies are societies where people can access financial products and services without the fear of criminal activity. Much of the related criminal activity comes when people are making payments at points of sale. Technologies such as debit cards and mobile money are making financial transactions cashless, which reduces the amount of cash that a person carries and makes them less of a target for criminals. A reduction in robberies near a point of sale not only directly relates to the poor being able to keep their income payments, but it also can lead to a greater perception of safety which is often a barrier to many financial inclusion programs or products.

Indicator: Number of robberies per month

Data source: Government, Local law enforcement

## Long Term Outcomes

The model's hypothesis is that successful financial inclusion initiatives lead to long term desired outcomes of inclusive growth and increased well-being for the underserved population. These initiatives also work towards achieving the SDGs, including no poverty (SDG 1), gender equality (SDG 5), decent work and economic growth (SDG 8), and partnerships for the goals (SDG 17).

While a causal link between financial inclusion and long term outcomes has not been proven, a recent study by the International Monetary Fund and the National Bureau of Economic Research (IMF/NBER) did show that a reduction in barriers to financial inclusion "has significant and unambiguous direct impacts on GDP growth and productivity through smarter allocation of resources and more efficient financial contracting; resulting in stronger entrepreneurial activities and new business start-ups that increase aggregate output".<sup>50</sup> This may have been accomplished by reducing impediments to access, depth and intermediation of credit available to small and medium enterprises.

However, it is also important to note that the "impacts on inequality, on the other hand, could be either positive or negative depending on specific local conditions".<sup>51</sup> The same IMF/NBER study found that the

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<sup>49</sup> Marta Moratti and Luisa Natali. "Measuring Household Welfare." *UNICEF Office of Research Working Papers*, 2012.

<sup>50</sup> Yuwa Hedrick Wong. "IMF-MIT Study Shows How Financial Inclusion Drives Economic Growth." The MasterCard Center for Inclusive Growth. May 15, 2015. <http://mastercardcenter.org/insights/imf-mit-study-shows-financial-inclusion-drives-economic-growth/>.

<sup>51</sup> Ibid.

income inequality could initially worsen as more productive entrepreneurs and companies benefit more from financial inclusion, and the gap could get narrower as the other entrepreneurs and companies “catch up” when they benefit from the new demand generated by their peers.

MasterCard could evaluate if their financial inclusion initiatives are producing positive outcomes by tracking both financial inclusion and outcome KPIs as proposed in the paper, or by conducting randomized control trials to rigorously test the impact of MasterCard’s financial inclusion programs.

## Conclusion

MasterCard, as part of their financial inclusion strategy, is partnering governments to make in-kind governmental distribution programs digital. These programs provide the unbanked and underbanked with access to relevant products and services, encourage usage, and at the same time, help increase the safety, transparency and efficiency of delivering government benefit payments to the beneficiaries. It is through the access and usage of financial products and services the previously unbanked and underbanked can be given the opportunity to participate in the mainstream economy.

Metrics and measurement are important components of MasterCard’s strategy to understand the impact of financial inclusion. To further advance its commitment to financial inclusion and the SDGs, MasterCard seeks to expand on its existing KPIs to better track the impact of their efforts. This paper proposes a set of KPIs that not only track the impact of MasterCard’s financial inclusion programs, but also test and support the hypothesis that financial inclusion would lead to positive short to medium and long term outcomes, including achieving the SDGs. These KPIs fall into three main categories - KPIs that tracks access to financial products and services, KPIs that monitor usage of these products and services and KPIs that look at the well-being of a household or a society. Going forward, MasterCard could use these KPIs to achieve their goals of not only bringing the previously unbanked and underbanked into the folds of the formal global economy by providing them access to financial services, but also increasing household well-being and access to opportunities for advancement.

## Appendices

### I. KPI Summary Table

SHORT TO MEDIUM TERM OUTCOME	INDICATORS	DATA SOURCE
<b>Higher household consumption</b>	Monthly household food expenditure	Government census data, survey data
	Monthly household durable good expenditure	Government census data, survey data
<b>Increased household wealth</b>	Total household assets	Government census data, survey data
<b>Better education for children</b>	Number of days of school attended	Survey data
<b>Women empowerment</b>	Percentage of women engaged in income generating activity	Survey data
	Number of household decisions that women make	Survey data
<b>Healthier people</b>	Household expenditure on preventive health products	Healthcare centers, Hospitals
<b>Safer societies</b>	Number of robberies per month	Government, Local law enforcement

## II. Other MasterCard Government Financial Inclusion Initiatives

### *The Bangladesh Partnership*

Bangladesh is the 8th largest recipient of international remittances - Bangladesh receives \$15 billion of remittances contributing to 10% of GDP annually. There are also more than 120 million mobile phone users in Bangladesh. With this context in mind, MasterCard partnered Western Union, BRAC Bank, and bKash (a Bangladesh mobile financial service provider) to launch a new service that enables bKash's customers to receive overseas remittances directly into their bKash accounts on their mobile phones. Given that the remittances are transferred through the Western Union network, customers can alternatively collect their remittances from a Western Union agent if they wish to do so.

The process is simple - customers will enter the Western Union money transfer control number, remittance amount, and bKash PIN, and the request will automatically be processed using MasterCard's secure payment technology. Once the funds are credited in the bKash account, it can immediately be accessed, withdrawn or used to shop in stores, pay bills, or buy mobile airtime.

This service, launched in April 2016, makes "financial services accessible and affordable to millions of Bangladeshis, who would not otherwise have access to simple banking services, and helps drive financial inclusion by bringing the poor and unbanked into a regulated financial system," said MasterCard in their press release<sup>52</sup>. This allows Bangladeshis living in rural areas to more efficiently and easily receive remittances from their family and friends abroad.

Relevant KPIs that can be used to track the increase in access and usage, as well as short to medium term impact of this program are:

- Number of mobile money accounts included in the program (Access KPI)
- Average number of transactions (Usage KPI)
- Average value of remittances (Usage KPI)
- Monthly household food expenditure (Outcome KPI)
- Monthly household durable good expenditure (Outcome KPI)
- Number of robberies per month (Outcome KPI)

### *The South Africa Partnership*

In 2013, MasterCard partnered with the South Africa Social Security Agency (SASSA) that paid cash benefits to approximately 35% of its 52.3 million people population. South Africa struggles with one of the highest poverty rates around the world, economic inequality, an alarming level of HIV incidence in

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<sup>52</sup> "MasterCard, Western Union Join BKash To Make Cross-Border Money Transfers Into Mobile Phones A Reality For 22 Million Bangladeshis." MasterCard, Press Releases. April 17, 2016. <http://newsroom.mastercard.com/asia-pacific/press-releases/mastercard-western-union-join-bkash-to-make-cross-border-money-transfers-into-mobile-phones-a-reality-for-22-million-bangladeshis/>.

adult inhabitants, a historically marginalized black population, and at the time a 25% unemployment rate. SASSA distributed about \$11.4 billion to over 16 million people, including children and the elderly. With over 36% of the population living in less than \$2.50 day, distributing monthly contributions in cash that varied from \$135 to elderly support to \$31 in child support was extremely inefficient and difficult to control. To collect their benefit, the beneficiaries had to line in one of the pay-points, and the process could take as long as an entire day. Fraud was pervasive, with abuses in the system where beneficiaries would, for example, swap children to collect additional benefits. With no centralized database, users would also claim benefits more than once, and fraud was hard to prevent due to poor identity identification systems in place.<sup>53</sup>

In January 2012, SASSA started implementing a new system. MasterCard together with Grindrod Bank and Net1 developed a system in which users would register using both fingerprint and voice identification, and at the time of registering they would be provided with a debit card issued by MasterCard linked to an account at Grindrod Bank in which SASSA would deposit the monthly benefits. Each month, proof of life was required by biometric identification or voice authentication over the phone. If the user failed to make the authentication, the benefits would be suspended. SASSA cardholders could withdraw cash and make transactions free of charge in SASSA points of sale, whereas transactions done in an ATM remained charged. However, a portion of users continued to withdraw the entire benefit at the beginning of each month, confirming how overcoming cultural barriers remained a challenge. There was also a pushback from local governmental entities, given that the system eliminated a big part of corruption in both ends saving \$200 million for SASSA just in its first 14 months of operation.<sup>54</sup>

Relevant KPIs that can be used to track the increase in access and usage, as well as short to medium term impact of this program are:

- Number of points of sale per 100,000 (Access KPI)
- Number of people who now have access to financial products and services within 5km (Access KPI)
- Average number of transactions (Usage KPI)
- Amount of deposits in savings accounts (Usage KPI)
- Monthly household food expenditure (Outcome KPI)
- Household expenditure on preventive health products (Outcome KPI)
- Number of robberies per month (Outcome KPI)

### *The Nigeria Partnership*

In Nigeria, MasterCard partnered with the government to roll out the first part of a national ID issuance program. The pilot phase consisted of the issuance of over 13 million ID cards for Nigerians in the

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<sup>53</sup> Sunil Gupta, R. Lal, and N. Kindred. "MasterCard: Driving Financial Inclusion." *Harvard Business School*, 2014

<sup>54</sup> Ibid.

summer of 2014. The program has been stalled twice before due to terrorism-related instability, and prohibitive cost feasibility. MasterCard approached the Nigerian government with a proposal that included the technical layout of the project and its economic feasibility at no cost for the government. To be part of the deal, MasterCard had to ease concerns that they were providing the American government with the identities of the Nigerian population.<sup>55</sup>

Upon registering, the users would have their fingerprints collected and would be issued a pre-paid debit card used with a PIN. In the beginning social benefits were not deposited in the card, and users had to deposit their own money. Dipo Fatokun, director of payments in the Central Bank of Nigeria, noted that MasterCard was not a definitive partner to the program, and that getting consumers to trust the banking services was the most difficult part of rolling out a program of this nature.<sup>56</sup>

Relevant KPIs that can be used to track the increase in access and usage, as well as short to medium term impact of this program are:

- Number of mobile money accounts included in the program (Access KPI)
- Frequency of debit card use per user per month (Usage KPI)
- Amount of deposits in savings accounts (Usage KPI)
- Monthly household food expenditure (Outcome KPI)
- Monthly household durable good expenditure (Outcome KPI)
- Number of robberies per month (Outcome KPI)

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<sup>55</sup> Ibid.

<sup>56</sup> Ibid.

### III. Data Sources<sup>57</sup>

TABLE 3. COMPARISON OF MULTI-COUNTRY DEMAND-SIDE DATA ON FINANCIAL INCLUSION

SURVEY	DESCRIPTION	FREQUENCY	COUNTRY COVERAGE	PUBLICLY AVAILABLE
Findex	Cross-country, nationally representative survey of households' finances	Triennial rounds, annual rounds for selected questions	Global	Yes
Enterprise Survey (World Bank)	Firm-level surveys, representative sample of a country's private sector. Broad range of business environment topics including access to finance measures	Every few years	Over 125 countries	Yes
Consumer Protection, Financial Capability Surveys (World Bank)	Nationally representative survey of financial capability, consumer protection awareness, money management, and usage of financial products	One time, with potential to repeat	Selected countries: 17 to date	Yes
Living Standards Measurement Study (LSMS)	Multitopic, nationally representative household data. Module on access to and usage of financial services available for some countries	Irregular	Selected countries	Partially
FinScope	Nationally representative study of consumers' perceptions on financial services and issues	Irregular	14 in SSA, Pakistan, and India	No
MECOVI	Information about the people's living conditions with data on financial access rates	Irregular	12 in LAC	No
Financial Diaries	Year-long household survey that examines financial management in poor households	One year-long survey	South Africa, India, and Bangladesh	No

Source: Adapted from IFC (2011).

Note: SSA = Sub-Saharan Africa; LAC = Latin America and the Caribbean.

<sup>57</sup> "Financial Inclusion Strategies Reference Framework." *The World Bank*. August 2012.

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