# Bill & Melinda Gates Foundation

100+ Countries / $3.6 Billion in 2011 Grants / $26.1 Billion in Grants since Inception

<table>
<thead>
<tr>
<th>Global Development</th>
<th>Global Health</th>
<th>US Program</th>
</tr>
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<tbody>
<tr>
<td>Agricultural Development</td>
<td>Discovery &amp; Translational Sciences</td>
<td>College-Ready Education</td>
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<td>Emergency Response</td>
<td>Enteric and Diarrheal Diseases</td>
<td>Postsecondary Success</td>
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<td>Family Planning</td>
<td>HIV</td>
<td>Washington State</td>
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<td>Neglected Infectious Diseases</td>
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<td>Financial Services for the Poor</td>
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<td>Global Libraries</td>
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<td>Maternal, Neonatal &amp; Child Health</td>
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<td>Nutrition</td>
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<td>Polio</td>
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<td>Vaccine Delivery</td>
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<td>Water, Sanitation &amp; Hygiene</td>
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Financial Services for the Poor

Our goal is to alleviate poverty by expanding access to digitally-based financial services.
Payment Systems Research

6 Country Deep Dives
100+ In-Person Interviews
McKinsey Payments Database
External Advisory Board
A Payments value chain (US frame) – key points of change

<table>
<thead>
<tr>
<th>Category</th>
<th>Payee device/gateway</th>
<th>Transaction acquirer</th>
<th>Acquirer processor</th>
<th>Network</th>
<th>Issuer processor</th>
<th>Payment instrument issuer</th>
<th>Payer device</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDA/check</td>
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<td>ACH</td>
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<tr>
<td>Credit card</td>
<td>POS / ECR systems providers</td>
<td>Collecting bank</td>
<td>Collecting bank or processor</td>
<td>Clearing houses</td>
<td>Paying bank processor</td>
<td>Paying bank</td>
<td></td>
</tr>
<tr>
<td>Debit card/ATM</td>
<td>ATM manufacturers / servicers</td>
<td>Originating depository financial institution</td>
<td>Fed. EPN</td>
<td>Receiving depository financial institution</td>
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<tr>
<td>Prepaid card</td>
<td>Payments gateways and software companies</td>
<td>Merchant acquirer</td>
<td>Merchant processor</td>
<td>Card associations</td>
<td>Card associations</td>
<td>EFT networks</td>
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<tr>
<td>Money transfer</td>
<td>Wireless device manufacturers</td>
<td>Prepaid acquirer</td>
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<tr>
<td>Emerging</td>
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</tbody>
</table>

Global card associations

- Merchant acquirer
- Merchant processor
- Issuer
- Issuer processor
- Issuer
- Agent
- Money transfer operator
- Agent
- Specialist payments providers

Source: McKinsey Global Payments practice
User-Oriented vs. Institution Oriented.

ACCOUNTS  CICO  TRANSACTIONS  ADJACENCIES
Business Models

Cost Reduction

Innovation

Market Behavior
Business Models: Understanding System-wide Profitability

20+ countries analyzed
3 payment system business models
Three Business Models

1

ACTA

2

AC

TA

3

A

CTA
Model 1: Balance driven profitability ($/year)

France

ACCOUNTS: -145
CICO: -47
TRANSACTIONS: 2
ADJACENCIES: 198
Model 2: Mixed drivers of profitability ($/year)

Denmark

- ACCOUNTS: -110
- CICO: -44
- TRANSACTIONS: 40
- ADJACENCIES: 183
Model 3: Usage driven profitability ($/year)

M-PESA

<table>
<thead>
<tr>
<th>ACCOUNTS</th>
<th>CICO</th>
<th>TRANSACTIONS</th>
<th>ADJACENCIES</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>6</td>
<td>4</td>
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<tr>
<td>-7</td>
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Business Models

Cost Reduction

Innovation

Market Behavior
Cost Reduction: Three levers drive cost variation across countries

**A** Channel: Digital is cheapest, with smallest variance

**B** Scale: High transaction volume necessary – to a point

**C** Efficiency: Drives costs down throughout the system
Digital channels are cheapest and have smallest cross-country variance

Credit transfer example

Credit transfer transaction costs by channel²

<table>
<thead>
<tr>
<th>Channel</th>
<th>Weighted average</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>0.16</td>
<td>0.04</td>
<td>0.30</td>
</tr>
<tr>
<td>ATM³</td>
<td>0.17</td>
<td>0.05</td>
<td>0.20</td>
</tr>
<tr>
<td>Call center</td>
<td>0.61</td>
<td>0.30</td>
<td>0.90</td>
</tr>
<tr>
<td>Mail</td>
<td>0.75</td>
<td>0.40</td>
<td>1.30</td>
</tr>
<tr>
<td>Branch</td>
<td>2.36</td>
<td>1.00</td>
<td>6.50</td>
</tr>
</tbody>
</table>

1 Based on cost estimates in the US and Europe; 2. “Digital” payments are initiated through the internet (mobile or desktop), and can include one-switch payments for corporate users. “Mail” is initiated via mail-in form to payer’s bank. Other channel definitions are in the appendix.; 3 ATM transactions are similar to digital (the ATM playing the role of the payer’s computer) with an additional small cost allocation from time ATM is used for cash transfers. However, only more efficient payment systems offer credit transfers via ATM so the max cost across our sample countries is smaller than that for digital.

Both minimum scale and operational effectiveness are essential to reach low costs

Electronic credit transfer example

1 Kenya has 16M annual credit transfers and Nigeria 37M. Of these an approximate 50-60% are electronic, rather than branch initiated (based on electronic volumes of 55 in China and 60% in India)

SOURCE: McKinsey Global Payments Map 2012 (2010 data); BIS
Innovation: Tomorrow’s systems may be different than today’s

New players
New activity owners
New value
**Innovation**

**FinSphere**
Mobile user location data used to prevent fraud

**Dwolla**
Faster & cheaper alternative payment processing

**LianLian Pay**
Distribution networks expanding through unconventional means

**M-KOPA**
Pay-as-you-go model for goods, powered by mobile money
Business Models

Cost Reduction

Innovation

Market Behavior
Market Behavior: Cost alone does not determine price to transact
Price tends to depend on structure and competitiveness of the market, with utility-type systems charging lower fees.

Revenue from transaction fees from a $10 debit card transaction

USD

- Kenya: 0.24 USD
- US\(^1\): 0.16 USD
- India: 0.14 USD
- China: 0.10 USD
- Nigeria\(^2\): 0.09 USD
- Netherlands: 0.07 USD

1. The Durbin amendment caps card swipe fee at $0.21 + 0.05%, for large banks, so for larger transactions, revenue in the US will be comparatively lower than in other countries. E.g., for a $100 transaction it would be ~$0.26 versus ~$1.00 in India.
2. Maximum MDR in Nigeria is 125 bps but estimated average is ~65 bps. Many acquiring banks will give merchants favorable deals on MDR as part of a larger business relationship.

Business Models

Cost Reduction

Innovation

Market Behavior
Balance driven revenues are insufficient

Low revenues; providers lose money on poor users

Incentives aligned around driving system usage – benefits both providers and poor users
Parting Thoughts

Activities rather than institutions
Work across industries
Higher complexity
Need solid baseline system understanding
Challenges and opportunities

Open Questions

Short vs. long-term solutions?
Usage driven model at country level?
Degree of government coordination of the market?
Thank You

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