Increased access to banking products – such as savings, deposits and insurance – is key to reducing poverty on a global scale. Financial services provide ways and means for lower income persons to invest in productive assets, expand their businesses and protect their livelihoods. Moreover, research has shown that increased levels of entrepreneurship is a significant factor in bolstering the middle class in developing countries. For example, it was explained (Deininger & Squire, 1996) that the availability of finances has an essential linkage to a reduction in Gini coefficient (inequality in the distribution of wealth). Still, lack of access to finance and banking services remains one of the biggest obstacles for SMEs and entrepreneurs in developing countries in terms of business growth or new ventures.

Penetration of financial services in developing economies is notoriously low, but mobile diffusion rates are high with a steady growth trajectory. Mobile commerce delivers a foundation from which to offer more opportunity and stability to lower and middle-class citizens in developing nations, and to assist in meeting development objectives in an equitable manner.

The Strong Mobile Market in the Caribbean and Latin America

Over the last decade, liberalisation of the telecommunications sector has occurred in the majority of nations in the Caribbean and Latin America, with operators in these countries now offering a full suite of telecoms services. Regardless of the comparatively small markets by international standards, telecommunications has become one of the major growth industries for the region (especially the Caribbean).

While in a handful of countries Cable & Wireless (now rebranded LIME) still holds a monopoly in the fixed-line sector, many countries now have other operators offering fixed-line services at competitive prices. Nevertheless, mobile has been the preferred technology for the region. The region’s mobile subscriber base has been witnessing significant growth in recent years, driven, in particular, by aggressive competition from Digicel, the Irish mobile communications giant.

By late 2006, mobile penetration in the Americas region was over 62%. It is worth noting, however, that penetration rates range from single figures to over 300% in some cases.
Compared to other regions globally, the mobile penetration rate in the Americas is quite high.

The annual average growth rate also demonstrates the availability and rapid growth of mobile services across the region.

According to a study by BuddeComm, a telecoms research firm based in Australia, mobile phone penetration in the Caribbean and Latin America grew to an approximated 80% by 2009, some ways above the global average, which was about 58%, with 458 million people in the region owning a
mobile phone (Baker, 2010). This means that the Caribbean and Latin America now combine for an estimated 12% of the world’s 3.97 billion mobile subscribers.

It is also reported that with the exception of some first-world Caribbean nations, the highest mobile penetration rates in early 2009 were seen in Jamaica (115%), Argentina (110%), Uruguay (109%), and Venezuela (101%). On the other end of the spectrum, penetration rates were much lower in Bolivia (48%), Costa Rica (48%), and Nicaragua (52%). Cuba, the country with the region’s lowest mobile penetration, stagnated at 2.9%. Penetration in Haiti, the second lowest country, shot up from a 4.8% in late-2005 to 41% at year end of 2008; attributed to the rollout of low-cost GSM services by Digicel, the pan-Caribbean mobile giant, which entered the Haitian market in mid-2006.

**Digital Opportunities Present Themselves**

What does this unbridled growth in mobile services present for the Caribbean? To be succinct, this mobile revolution presents a tremendous opportunity for the development of a mobile banking ecosystem across the region, namely financial services customized for the Caribbean experience, Caribbean people and Caribbean growth and development. In her 2008 paper titled, “Developing Mobile Money Ecosystems”, Beth Jenkins maintains that this need and opportunity is shared by companies and customers alike. She explains that across diverse industries, the mobile channel offers the opportunity to increase market share as well as to enhance service for existing customers. In specific industries, such as telecoms and software development, it offers the chance to develop whole new business segments. For customers, the benefits of mobile money include accessibility, affordability and security. The mobile channel can essentially open access to financial services and other markets to several, mostly low-income, customers who are at present excluded altogether.

In 2010, a chartered Canadian Bank, headquartered in Toronto and with international operations in the United States, Asia, the United Kingdom and the Caribbean, moved to grasp the digital opportunity that had presented itself.

The organization partnered with Sybase 365, a subsidiary of Sybase, Inc., the global leader in mobile messaging and mobile commerce services, to become the first regional bank to provide customers with m-banking services enabling them the flexibility and convenience of managing their finances over their mobile phones. The service was SMS-based, and as such was available to any individual; regardless of what mobile platform they used (e.g. BlackBerry OS, Android, AppleOS, Symbian, etc.). The first iteration of the service allowed customers to check account balances, get balance alerts, transfer money, and monitor recent transactions. Then, in early 2011, additional features were added whereby the service could be utilized to pay bills and transfer funds between third-party beneficiaries. During the first year, approximately 30,000 customers signed on to take advantage of the convenience of the aforementioned m-Banking offering.

**Creating a Mobile Payments Ecosystem (m-Wallet)**

With m-Banking established, efforts are currently in play to create a mobile payments ecosystem for the Caribbean. It must be admitted that these are challenging times in terms of the development of a region-wide mobile payments ecosystem. Many of the participants in the process are still trying to grasp exactly what constitutes a business ecosystem. In common literature, a ‘business ecosystem’ is seen as:

> “an economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world. This economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders [who,] over time, […] co-evolve their capabilities and roles.”

In most cases, mobile network operators (MNOs) usually take the leadership role in developing mobile economies. By virtue of their infrastructure base which serves as the distribution channel for mobile transactions, the practical view is that the MNO ought to be the thought leader in this atmosphere. However, in the Americas, the impetus and innovation required to develop m-Wallet capabilities is being demonstrated by the banking sector, which has initiated partnerships with various MNOs.
Subjectively, the leadership argument in developing mobile payments is just as strong for banks as with MNOs. Mobile banking is 50% cheaper than servicing customers via traditional channels, and the untapped market potential is phenomenal. Unlike MNOs, financial services institutions are specifically authorized by financial industry regulators to serve certain purposes, including taking deposits and transferring funds across borders.

Governments across the Caribbean also have a major role to play in the development of the mobile economy, while maintaining the necessary oversight. Regulators need to provide the operating climate that will enable the mobile money ecosystem to thrive. They can foster the environment for innovation and, as key lessons are learned, assemble the policy mechanisms required to support further growth as well as build trust in the system. Given their dearth of experience in this area, the strategy that has been adopted by regional governments is comprised of capacity building programs, public-private partnerships and international cooperation agreements. These are all, in my opinion, key contributing factors to successfully building the enabling environment for mobile payments.

**FIGURE 4: BASELINE CONFIGURATION FOR A MOBILE MONEY ECOSYSTEM**

As is quite apparent, mobile payment ecosystems require various inputs and outputs from a diverse collection of players, such as mobile network operators, banks, retail companies, employers, utilities, regulators, international donor agencies, and even civil society. Based on the illustration above, the defined roles, assets, functional capabilities, business drivers, and constraints or restrictions of all these parties create a high level of interdependence with a layered configuration that demands optimal interaction. The resulting “Multilayer-Multiplayer Mechanism” should have no centralized authority, and participating public sector, private enterprises and non-governmental organizations ought not to be subordinate to one another. The only ways in which the mobile payments ecosystem will truly flourish is through committed, multi-stakeholder partnerships. It ultimately manifests itself as a delicate endgame which may obligate the various factions to synergize their conflicting goals of socio-economic development and revenue generation.

**Looking Ahead to Ubiquitous Payments (u-Payments)**

A loosely-knit group of researchers and members of various technical communities in the Americas are presently defining the future state of mobile commerce across the region, and the consensus

Source: World Bank
appears to be that ubiquitous payments (u-payments) are the most promising option. While there is no consensus definition of u-payments at this time, a prior description of ubiquitous computing can be used as a basis for further elaboration. Ubiquitous computing is the most unobtrusive manner in which individuals or objects can interface with computing systems (Weiser et al, 1999). Hence, u-payments can be defined as ubiquitous, invisible and unobtrusive payment, which is integrated into the environment and references the context of the payer. The payer in this case could be an individual or an object. This means, that the payment process should not interrupt the payer in his current action or should not disrupt ongoing processes, unless a process change initiates the payment. Conversely, m-payments can be categorized as any banking transaction, where at least one participant uses a mobile device. This device can be a mobile phone or a personal digital assistant (PDA).

Recent developments in mobile device platforms, wireless networking (802.11x, Bluetooth, WiMAX, LTE, etc.), interactive digital media and automated data capture (more specifically RFID – Radio Frequency Identification) have laid the platform for the implementation of ubiquitous payment systems; integrated commercial environments capable of enhancing the total human experience in such a way that the consumer feels engaged, understood, supported, and eventually, fulfilled (Roussos & Kourouthanassis, 2003). Some example applications of u-payments are smart homes (remote shopping, out-of-stock alerts), pervasive retail (automated self-checkout, inventory management) location and context awareness (location-based services, directed marketing), health and home care, value transfer and automotive telematics. The benefits to underserved and previously excluded demographics are numerous.

For any u-payment application to be successful, the service provider will need to deliver a secure, transparent and simple end-to-end payment process. The amount of human interaction will be decided by embedded security features such as an active payment authorization by the customer (Gross et al, 2003). Work is also being done on object-to-object payment scenarios. The underlying assumption being that products or objects will trigger payments when product associated services are used. The user will be able to concentrate on the usage of the objects instead of concentrating on the payment process. The objects are context sensitive and their buying decisions and actions are based on implemented rules, which take the contextual situation into account.

While the early assessments appear promising, there is still much work to be done before payment enabled ubiquitous computing services are to become a reality. Further research should focus on determining applicable business models (pay-per-use, pay-per-damage or pay-per-risk), evaluation of engineering standards and requirements, personal identity considerations, security and privacy, and user acceptance. Security and privacy issues will be of critical importance given that continuous information will be required on the customer’s location, purchasing patterns, demographic information and household data. Such high levels of data capture may run counter to data protection laws in developed countries, but given the absence of such legislation in the Caribbean, this presents an opportunity to build the enabling regulatory framework while testing is performed and user acceptance scenarios are explored. At the same time, the involvement of users in the design and development of the ubiquitous payment platform will assist in identifying acceptance barriers and provide the feedback loop needed to design a system that aligns to user needs and expectations.

References


