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Governance of Global Mobile Money Networks: The Role of Technical Standards

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GOVERNANCE OF GLOBAL MOBILE MONEY NETWORKS:
THE ROLE OF TECHNICAL STANDARDS

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ABSTRACT

Mobile money has the potential to be an effective policy instrument for financial inclusion in developing countries, but it also has the potential to fuel money laundering and terrorist financing. The 2012 revised Financial Action Task Force standards attempt to strike a workable balance between the goals of financial inclusion and financial integrity in developing countries. Mobile money schemes are mostly based in national markets, however, and are not normally designed to address the need of poor migrants for cheap, effective cross-border remittance services. Demand for such cross-border remittance services may drive the development of technical standards to build global markets from national ones. As in other global governance contexts, regulatory competition among both developed and developing countries is likely to arise, and be shaped by network externalities, the economics of platform markets, and new governance institutions as well as national government strategies. If such standard-setting efforts treat

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compliance with AML/CTF as requirements, then the growth of global networks might promote both inclusion and the development of “integrity by design” in global mobile money technologies. Co-regulatory mechanisms already in place in the United States and European Union for managing the interface between technical standards and legislation might provide some helpful models for accomplishing this. Ensuring that the governance of global mobile money networks is effective, legitimate, and accountable from the perspective of stakeholders in both developed and developing economies will be difficult, however.

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“This notion of standards, as boring as it is, is really the plumbing of the Internet economy,” Thibeau said. “It turns out that you can only go so far . . . until you come up with standards. Standards build markets. Standards help the pie grow bigger.”¹

INTRODUCTION

Globalization integrates what once appeared to be separate national markets, creating new challenges and opportunities in its

¹ Mark Milian, *Will a Standardized System for Verifying Web Identity Ever Catch on?*, CNN (Feb. 15, 2012), <http://edition.cnn.com/2012/02/15/tech/web/government-online-id/index.html> (quoting Don Thibeau, the executive chairman for the OpenID Foundation).

wake. Opportunities spawned by globalization are not exclusively for the wealthy and educated in developed countries: the volume of migration by the world's poor seeking a better life has also grown enormously in recent decades.² Even when the poorest economic migrants enjoy modest success, however, they face another challenge: finding safe, inexpensive ways to send relatively small amounts of money back home. If they have migrated within a country that has a robust domestic remittance system, then this challenge is easily overcome. But most poor migrants live in countries that have made little progress in financial inclusion, or have migrated abroad and so must find a cross-border remittance mechanism.³

This Article was written for a conference examining the impact of financial inclusion and financial integrity strategies on the growth of mobile money services in developing countries.⁴ In this Article, “mobile money” refers to mobile financial services generally, including mobile payments and mobile banking.⁵ As a

² “There are far more international migrants in the world today than ever previously recorded, and their number has increased rapidly in the last few decades...[in 2000, there were an estimated 150 million migrants; in 2010, there were an estimated 214 million].” INT’L ORG. FOR MIGRATION, WORLD MIGRATION REPORT 2010, THE FUTURE OF MIGRATION: BUILDING CAPACITIES FOR CHANGE 3 (2010).

³ Jake Kendall, *The Poor Need Better Payment Services*, CONSULTATIVE GROUP TO ASSIST THE POOR (CGAP) (Dec. 7, 2011), <http://www.cgap.org/blog/poor-need-better-payment-services>.

⁴ The proceedings of the conference were published in January 2013 as special issue of the WASHINGTON JOURNAL OF LAW, TECHNOLOGY & ARTS, available at <http://www.law.washington.edu/wjtla>.

⁵ There is no generally accepted definition of “mobile money,” but the definition used in this Article has been used in other contexts. See generally Janine Firpo, *E-Money–Mobile Money–Mobile Banking–What’s the Difference?*, BLOGS.WORLDBANK.ORG (Jan. 21, 2009), <http://blogs.worldbank.org/psd/e-money-mobile-money-mobile-banking-what-s-the-difference>; PIERRE-LAURENT CHATAIN, ANDREW ZERZAN, WAMEEK NOOR, NAJAH DANNAOUI & LOUIS DE KOKER, PROTECTING MOBILE MONEY AGAINST FINANCIAL CRIMES xxvii (2011) (mobile money “refers to a financial service in which customers send and receive monetary value via a mobile phone. This includes retail payments and remittances from one person to another or between businesses. Salary and benefit distributions into mobile-linked accounts are also encountered in some countries. M-money accounts can be provided by many types of institutions,

result of the success of mobile payment schemes in countries such as Kenya⁶ and the Philippines, mobile money has emerged as a game-changing strategy for financial inclusion in developing countries.⁷ For the purposes of this Article, financial inclusion is defined as “. . . a state in which all people of working age have access to a full suite of quality financial services that includes payment services, savings, credit, and insurance. These services are provided at affordable prices, in a convenient manner, and with dignity for the clients.”⁸ In 2009, the World Bank estimated that the unbanked population of the world was 2.7 billion, or 70 percent of the adult population in the developing world.⁹ Financial inclusion has been shown to increase economic growth, reduce income inequality and help alleviate poverty for this population.¹⁰

In this Article, “financial integrity” refers to controls over financial services that support anti-money laundering and counter-terrorist financing as well as conventional control objectives including disclosure to investors and management decision-making. Although compliance with international anti-money

including banks and nonbanks, such as mobile network operators and payment system providers. The category of services includes transaction-enabling services, such as domestic or international person-to-person funds transfers or mobile-based payment services. M-money services are part of the retail payment industry and are covered by the national payment system oversight policy.”)

⁶ Mercy W. Buku & Michael W. Meredith, *Safaricom and M-PESA in Kenya: Financial Inclusion and Financial Integrity*, 8 WASH J.L. TECH. & ARTS 375 (2013).

⁷ George B. Radics, *Development and Mobile-Banking in the Philippines* (2011) (unpublished draft) (on file with author).

⁸ CTR. FOR FIN. INCLUSION AT ACCION INT’L, *MEXICO’S PROSPECTS FOR FULL FINANCIAL INCLUSION: A WHITE PAPER FROM THE FINANCIAL INCLUSION 2020 PROJECT 4* (2009), available at <http://centerforfinancialinclusionblog.files.wordpress.com/2011/10/mexicos-prospects-for-full-financial-inclusion-english.pdf>.

⁹ JAKE KENDALL, NATALIYA MYLENKO & ALEJANDRO PONCE, *MEASURING FINANCIAL ACCESS AROUND THE WORLD 25* (CGAP Policy Research Working Paper No. 5253, 2010), available at <http://www.cgap.org/sites/default/files/CGAP-Measuring-Financial-Access-around-the-World-Mar-2010.pdf>.

¹⁰ WORLD BANK, *FINANCE FOR ALL? POLICIES AND PITFALLS IN EXPANDING ACCESS 28* (2008), available at http://siteresources.worldbank.org/INTFINFORALL/Resources/4099583-1194373512632/FFA_book.pdf.

laundering and counter-terrorist financing (AML/CTF) guidelines has been seen as a barrier to the use of mobile money for financial inclusion in other developing countries, the 2012 revisions to Financial Action Task Force (FATF) AML/CTF guidelines reflect efforts to address these concerns.¹¹ In developing countries, AML/CTF policies may sometimes appear to be dictated by external stakeholders, while safety and soundness concerns including the management of operational risks may appear to be more within the purview of national regulators.¹² This Article will focus on those areas of financial market regulation conducted by national regulatory authorities where the two different strategies overlap, while conceding that there may be significant areas where they do not overlap or may even be at odds with each other.¹³

To date, most efforts to promote the development of mobile money as a financial inclusion strategy have centered on national markets. As adoption rates grow for mobile money within national markets in developing countries, increased attention will turn to the possible use of mobile money for cross-border remittances.¹⁴

¹¹ FIN. ACTION TASK FORCE, INTERNATIONAL STANDARDS ON COMBATING MONEY LAUNDERING AND THE FINANCING OF TERRORISM & PROLIFERATION: THE FATF RECOMMENDATIONS (2012) [hereinafter 2012 FATF RECOMMENDATIONS], available at [http://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF%20Recommendations%20\(approved%20February%202012\)%20reprint%20May%202012%20web%20version.pdf](http://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF%20Recommendations%20(approved%20February%202012)%20reprint%20May%202012%20web%20version.pdf).

¹² Rainer Hülse, *Even Clubs Can't Do Without Legitimacy: Why the Anti-Money Laundering Blacklist Was Suspended*, 2 REG. & GOVERNANCE 459 (2008); Claire Alexandre, Ignacio Mas & Daniel Radcliffe, *Regulating New Banking Models to Bring Financial Services to All*, 54 CHALLENGE 116 (2011).

¹³ Exploring possible conflicts between FATF Guidelines and national financial services regulatory objectives is beyond the scope of this Article. On potential conflicts between transnational anti-money laundering efforts and national regulatory objectives, see generally Richard K. Gordon, *Losing the War Against Dirty Money: Rethinking Global Standards on Preventing Money Laundering and Terrorism Financing*, 21 DUKE J. COMP. & INT'L L. 503 (2011); Mariano-Florentino Cuellar, *The Mismatch Between State Power and State Capacity in Transnational Law Enforcement*, 22 BERKELEY J. INT'L L. 15 (2004).

¹⁴ DALBERG GLOBAL DEV. ADVISORS, CGAP LANDSCAPE STUDY ON INTERNATIONAL REMITTANCES THROUGH MOBILE MONEY (2012), available at <http://www.gsma.com/developmentfund/wp-content/uploads/2012/03/2012landscapestudyoninternationalremittancessthroughmobilemoney.pdf>.

Demand for such cross-border remittance services will fuel demand for the development of a global mobile money network architecture based on a wide range of different types of “standards.”¹⁵ In English, the word “standard” can refer to a bewildering array of different things, however.¹⁶ In U.S. legal academic writing, a “standard” may refer to regulatory guidance or an open-ended principle contained in judicial precedent as opposed to a formal legal rule.¹⁷ In social science or policy analysis, it might be a reference to “normative standards and advisory guidance” issued by “private regulators.”¹⁸ In engineering, “standard” may refer to measurement standards, product and process standards, management standards, or interoperability standards.¹⁹ In this Article, the term “technical standard” will generally be used to refer to engineering standards, while the term

¹⁵ Glenbrook Partners, *Visa, GSMA to Partner for Secure Mobile Money Services Globally*, PAYMENTS NEWS (Feb. 18, 2009), <http://www.paymentsnews.com/2009/02/visa-gsma-to-partner-for-secure-mobile-financial-services-globally.html>; NEIL DALY, GSMA INTERNATIONAL REMITTANCE SERVICE PROVIDERS : AN OVERVIEW OF MOBILE INTERNATIONAL REMITTANCE SERVICE PROVIDER SERVICE OFFERINGS (2010), *available at* <http://www.gsma.com/developmentfund/wp-content/uploads/2012/03/gsmaremittanceserviceproviderwhitepaper182.pdf>; Jennifer Schenker, *Mobile Money: Can Visa and Its Partners Help the Operators Stay in the Game?* INFORMILO (Feb. 26, 2012), <http://www.informilo.com/20120226/mobile-money-can-visa-and-its-partners-help-operators-stay-game-536>.

¹⁶ For example, the OXFORD ENGLISH DICTIONARY online version recognized 28 separate meanings for “standard” as a noun (rather than an adjective or verb), with numerous sub-classifications within each of those 28 meanings. *Standard Definition*, OXFORD ENGLISH DICTIONARY, <http://www.oed.com/view/Entry/188962?rskey=w0q1fc&result=1#eid> (last visited Sept. 16, 2012).

¹⁷ See generally Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992).

¹⁸ CGAP, GLOBAL STANDARD-SETTING BODIES AND FINANCIAL INCLUSION FOR THE POOR: TOWARD PROPORTIONATE STANDARDS AND GUIDANCE 1 (2011) (discussing “normative standards and advisory guidance”); TIM BÜTHE & WALTER MATTLI, THE NEW GLOBAL RULERS: THE PRIVATIZATION OF REGULATION IN THE WORLD ECONOMY 126-161 (2011) (discussing “private regulators”).

¹⁹ CRAIG N. MURPHY & JOANNE YATES, THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO): GLOBAL GOVERNANCE THROUGH VOLUNTARY CONSENSUS (2009).

“standard” without qualification will generally refer to legal and political norms.

The architecture of global markets is increasingly defined by information and communication technology (ICT) interoperability standards. This is because in recent decades, business administration has migrated from traditional bureaucracies and paper communications to network organizations linked by computers. The rise of ICT networks as the backbone of economic organization together with decades of trade liberalization are major factors contributing to the rise of global markets from what were once geographically remote local markets. Technical interoperability can be achieved in a wide variety of ways, including proprietary technologies that operate as *de facto* standards such as the Microsoft Windows operating system. Technical interoperability can also be achieved through open, collaborative processes such as open source software development or public standard-setting processes such as those conducted under the auspices of the International Organization for Standardization (ISO) or the Internet Engineering Task Force. Governance of technical standard-setting processes and managing the “interface” between national laws and technical standards are fundamental tasks that must be accomplished in order for any global market to function at an operational level.²⁰ Interface here is used a metaphor for a “regulatory tool” or “mechanism choice.”²¹ When ICT networks operate in both developing and developed countries simultaneously, these governance and management challenges become even more complex and difficult.²²

Different national governments respond to the challenges of

²⁰ See generally Jane K. Winn, *Globalization and Standards: The Logic of Two-Level Games*, 5 I/S: J.L. & POL'Y FOR INFO. SOC'Y 185 (2009), available at <http://ssrn.com/abstract=1415424>.

²¹ See generally Lester M. Salamon, *The New Governance and Tools of Public Action: An Introduction*, in *THE TOOLS OF GOVERNMENT: A GUIDE TO THE NEW GOVERNANCE 1* (Lester M. Salamon ed., 2002); Jonathan B. Weiner & Barak D. Richman, *Mechanism Choice*, in DANIEL A. FARBER & ANNE JOSEPH O'CONNELL, *RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW* 363 (2010).

²² See, e.g., Howard Williams, *Internet Governance: Exploring the Development Link*, 58 COMM. & STRATEGIES 81 (2005); CGAP, *supra* note 18.

globalization in different ways because they take their institutional endowments and local political and economic culture into account when designing strategies. In the “varieties of capitalism” approach developed by Hall and Soskice, some countries can be identified as “liberal market economies” (LMEs) and others identified as “coordinated market economies” (CMEs).²³ The most noteworthy LMEs include the United States, the United Kingdom, Canada, Australia and New Zealand, while Germany, France and Japan are noteworthy examples of CMEs. In the context of mobile money as a financial inclusion and financial integrity strategy, the general LME/CME distinction might also be applied to the political economy of developing countries: Kenya seems to be a “developing country LME” while India seems to be a “developing country CME.” As a global network architecture for mobile money begins to emerge, distinct regulatory competition strategies may also emerge for developed LME, developed CME, developing LME and developing CME countries. As in all global markets defined by ICT networks, however, national regulatory competition strategies may be affected by economic variables such as strong network effects or the emergence of platform markets.²⁴

The 2012 FATF Guidelines strengthened the “Risk-Based Approach” to AML/CTF compliance efforts by making it mandatory rather than optional.²⁵ Regulators in developing countries will need more sophisticated tools than most now possess to demonstrate their compliance with this expanded Risk-Based Approach mandate. One common benefit of technical standards is reducing barriers to the diffusion of innovations. Although attention in mobile money standard-setting efforts is currently focused primarily on reducing barriers to its adoption, standardization efforts could also be focused on reducing the cost

²³ Peter A. Hall & David Soskice, *An Introduction to Varieties of Capitalism*, in *VARIETIES OF CAPITALISM: THE INSTITUTIONAL FOUNDATIONS OF COMPARATIVE ADVANTAGE* (Peter A. Hall & David Soskice eds., 2001).

²⁴ See *infra* Section III, Standards, Networks, and Platforms for further discussion of network effects and platform markets.

²⁵ 2012 FATF GUIDELINES, *supra* note 11 at Recommendation 1; see generally Louis de Koker, *The 2012 Revised FATF Recommendations: Assessing and Mitigating Mobile Money Integrity Risks Within the New Standards Framework*, 8 WASH J.L. TECH. & ARTS 165 (2013).

of demonstrating compliance with guidelines. With regard to computer security generally, it is now proverbial that “[s]ecurity is best baked in to the network, not bolted on later.”²⁶ With regard to information privacy, an analogous concept is known as “Privacy by Design.”²⁷ If technical standards for mobile money could be used to promote financial inclusion and reduce compliance costs simultaneously, such a result might be labeled “Integrity by Design.” Unless AML/CTF compliance issues are included in the scope of mobile money standard-setting activities, however, such a result is very unlikely, given the current security issues in the ICT networks of many developing countries.²⁸ The flood of computer security and information privacy problems currently facing developed countries as a result of underinvestment in security in the past and the difficulty of retrofitting effective security and privacy functions onto existing systems suggests what the costs might be of postponing AML/CTF compliance considerations in the global mobile money context.²⁹

Ensuring that the governance of global mobile money networks is effective, legitimate, and accountable from the perspective of stakeholders in both developed and developing economies will be difficult.³⁰ The calculus of consensus building regarding

²⁶ Cisco, *Cisco Systems Security—About*, FACEBOOK (Oct 1, 2008), www.facebook.com/ciscosecurity/info; Henry Kenyon, *DOD CIO Outlines Challenges: Handling Threats, New Tech with Shrinking Budgets*, GOV'T COMPUTER NEWS (Oct. 24, 2011), <http://gcn.com/articles/2011/10/24/dod-cio-outlines-challenges-facing-military-networks.aspx>.

²⁷ ANN CAVOUKIAN, PRIVACY BY DESIGN 1 (2009), available at <http://www.ipc.on.ca/images/Resources/privacybydesign.pdf>; see generally Ira S. Rubinstein, *Regulating Privacy by Design*, 26 BERKELEY TECH. L.J. 1409 (2011).

²⁸ See generally Andrew Harris, Seymour Goodman, & Patrick Traynor, *Privacy and Security Concerns Associated with Mobile Money Applications in Africa*, 8 WASH J.L. TECH. & ARTS 245 (2013).

²⁹ See generally Jane K. Winn, *Are “Better” Security Breach Notification Laws Possible?*, 24 BERKELEY TECH. L.J. 1133 (2010), available at <http://ssrn.com/abstract=1416222>.

³⁰ See generally Anne Peters, Lucy Koechlin & Gretta Fenner Zinkernagel, *Non-State Actors as Standard Setters: Framing the Issue in an Interdisciplinary Fashion*, in NON-STATE ACTORS AS STANDARD SETTERS 1 (Anne Peters, Lucy Koechlin & Gretta Fenner Zinkernagel eds., 2009); Benedict Kingsbury, Nico

technology governance in the global information economy is complex and uncertain under the best of circumstances.³¹ If the shortest route to bringing technological innovations to market is adopted to achieve financial inclusion goals, the result may be the inadvertent creation of barriers to efficient compliance with AML/CTF mandates. But if technological innovation is required to take a back seat to the integration of compliance functions, then financial inclusion may suffer. If participation in governance is conditioned on technological sophistication and familiarity with global ICT standard-setting processes, then many developing country stakeholders will be disenfranchised. But if ICT technical standard-setting processes become too politicized, then the standards they produce may fail to achieve any market adoption at all. Some resolution of these issues will be necessary in order for a global mobile remittance network to succeed politically as well as economically.

I. GLOBALIZATION, MIGRATION, AND REMITTANCES

Although the term “globalization” only came into widespread use during the 1990s, the current wave of economic globalization is not the first.³² The first wave of globalization occurred between 1870 and 1914, even though it was not given that label at the time. Although trade in goods increased, the hallmark of this first globalization was the mass migration of as much as 10 percent of the world’s population over this period. The scale of this migration has never been seen before or since. It was halted by the outbreak of World War I and law reforms during the interwar years intended to restrict immigration from the Old World in Europe and Asia to the New World of North and South America.

Kirsch & Richard B. Stewart, *The Emergence of Global Administrative Law*, 68 LAW & CONTEMP. PROBS. 15 (2005).

³¹ The failure of the Open Systems Interconnection project illustrates well the fragility such projects. See generally Andrew L Russell, “*Rough Consensus and Running Code*” and the *Internet-OSI Standards War*, IEEE ANNALS HIST. COMPUTING, July-Sept. 2006, at 48.

³² SUZANNE BERGER, HOW WE COMPETE: WHAT COMPANIES AROUND THE WORLD ARE DOING TO MAKE IT IN TODAY’S GLOBAL ECONOMY (2005).

The second wave of globalization occurred between 1950 and 1973, and was ushered in by trade liberalization policies and technological innovations such as the containerization of shipping. This wave of globalization consisted largely of increased volume of trade in goods. Migration was modest in scope and involved as much migration of professionals out of developed countries to developing countries as workers from developing countries to developed ones.

The third wave of globalization began in 1974 and continues through today.³³ Migration is again accelerating, with hundreds of millions leaving developing countries in pursuit of economic opportunity, at the same time that trade in goods continues to increase. Although the absolute numbers of migrants may be unprecedented, the current rate of migration affects only a tiny percentage of world population.

Economic migrants send home remittances, so the global market for remittances has grown together with migration. According to official estimates, the equivalent of US\$440 billion in remittances was sent in 2010, although the actual volume of remittances is probably much higher.³⁴ Of this amount, approximately US\$325 billion or roughly 75 percent was sent to developing countries. The total volume of remittance flows to many developing countries dwarfs direct foreign investment and foreign aid payments, and may equal 25 percent or more of GDP in some developing countries.³⁵

Economic migrants from developing countries often send relatively small amounts of money. Relative to the amount being transferred, remittance fees are often very high, averaging 10 percent of the principal transmitted.³⁶ As a result, many migrants rely on informal remittance systems. Informal remittance services

³³ *Globalization: Three Waves of Change*, THE ECONOMIST (July 17, 2008), <http://www.economist.com/node/11751235>.

³⁴ U.N. CONFERENCE ON TRADE AND DEV., MAXIMIZING THE DEVELOPMENT IMPACT OF REMITTANCES 25, U.N. Doc. UNCTAD/DITC/TNCD/2011/8 (2012), available at http://unctad.org/en/Docs/ditctncd2011d8_en.pdf.

³⁵ *Id.*

³⁶ Dilip Ratha, *Remittances: Funds for the Folks Back Home*, IMF FIN. & DEV. (Mar. 28, 2012), <http://www.imf.org/external/pubs/ft/fandd/basics/remitt.htm>.

offer fertile ground for money laundering and terrorist financing. If migrants were provided access to inexpensive, efficient remittance services, this could promote increased financial inclusion and financial integrity at the same time.

II. MOBILE MONEY: FINANCIAL INCLUSION AND FINANCIAL INTEGRITY

“Financial deepening” has long been understood to play an important role in the development process:

Economists have long contemplated the nature of complex links between financial development and economic growth Since the early 1990s, a growing body of [work by economists] has provided strong theoretical and empirical support for the hypothesis that financial development fosters economic growth.³⁷

In developing countries, widely disparate access to modern financial institutions and the persistence of traditional sources of finance, often create barriers to financial deepening and economic development:

A developed financial system broadens access to funds; conversely, in an underdeveloped financial system, access to funds is limited and people are constrained by the availability of their own funds and have to resort to high cost informal sources such as money lenders. Lower the availability of funds and [increase] their cost, fewer would be the economic activities that can be financed and hence lower the resulting economic growth.³⁸

³⁷ Nader Nazmi, *Deregulation, Financial Deepening and Economic Growth: The Case of Latin America*, 45 Q. REV. ECON. & FIN. 447, 447-48 (2005).

³⁸ Dr. Rakesh Mohan, Deputy Governor of the Reserve Bank of India, Address at the 2006 Annual Bankers’ Conference, Economic Growth, Financial Deepening and Financial Inclusion (Nov. 3, 2006), <http://www.bis.org/review/r061121e.pdf>.

The idea of finding ways to provide banking services to the poor in developing countries slowly began to gain momentum during the 1990s.³⁹

In 1999, United Nations Secretary-General Kofi Annan estimated that half of the six billion people that then constituted the world's population had never even made or received a telephone call.⁴⁰ Around the same time that observation was offered, liberalization of telecommunications markets in the wake of the WTO telecom agreement was triggering a communications revolution in many developing countries.⁴¹ The entry of China into handset and telephone switching equipment markets also helped to fuel the growth of mobile communications in developing countries by reducing equipment prices.⁴² Because telephones were not a major platform for the delivery of financial services in any country in the world during the 1990s, the connection between telephones and financial inclusion was not obvious to anyone at the time. During the 2000s, however, the sudden diffusion of mobile communications in developing countries emerged as the *deus ex machina* which unexpectedly made many financial inclusion problems look less intractable. As The Economist pointed out, "In places with bad roads, unreliable postal services, few trains and parlous landlines, mobile phones can substitute for travel, allow quicker and easier access to information on prices, enable traders

³⁹ JOHN CONROY, JAMIE BEDSON & NINA NAYAR, BANKING WITH THE POOR NETWORK: A HISTORY OF ASIA'S REGIONAL MICROFINANCE NETWORK 1990-2010 (2001), available at http://www.fdc.org.au/data/BWTP_Corporate_History.pdf.

⁴⁰ Kofi Annan, U.N. Secretary-General, Opening Address at the ITU Telecom Opening Ceremony, ITU: Committed to Connecting the World, (Oct. 9, 1999), quoted in Clay Shirky, *Half the World*, CLAY SHIRKY'S WRITINGS ABOUT THE INTERNET (June 30, 2002), http://shirky.com/writings/hercomeseverybody/half_the_world_old.html.

⁴¹ Peter Cowhey & Mikhail M. Klimenko, *The WTO Agreement and Telecommunications Policy Reform* (World Bank, Policy Research Working Paper No. 2601, 2001), available at http://siteresources.worldbank.org/INTRANETTRADE/Resources/Cowhey_Klimenko1.pdf.

⁴² See generally ERIC HARWIT, CHINA'S TELECOMMUNICATIONS REVOLUTION (2008).

to reach wider markets, boost entrepreneurship and generally make it easier to do business.”⁴³

The success of some early mobile payments schemes in Kenya,⁴⁴ South Africa⁴⁵ and the Philippines⁴⁶ helped to bring the issue of AML/CTF compliance for mobile payments into focus. The first international treaty to recognize the connection between national anti-money laundering efforts and the control of international crime was the 1988 United Nations Convention on the Illicit Traffic in Narcotic Drugs and Psychotropic Substances.⁴⁷ In 1989, the FATF was established at the initiative of what were then known as the G7 nations following the adoption by the United Nations General Assembly of a universal pledge to halt money laundering.⁴⁸ Membership of the FATF started with 16 countries, and over the years gradually expanded to the current 36 members, including 34 countries and 2 regional organizations; international organizations such as the World Bank and International Monetary Fund (IMF) are observers.⁴⁹ Regional FATF-style bodies are granted associate member status. In addition, nearly 150 other countries have committed to compliance with FATF guidance even though they are not members. In 1990, FATF issued a set of 40 Recommendations, and these were supplemented by Special Recommendations on Terrorist Financing that it adopted in 2001. The Recommendations were revised in 1996, 2003, and 2012. The

⁴³ Ted Eytan, *A Special Report on Telecoms in Emerging Markets: Mobile Marvels*, THE ECONOMIST (Sept. 24, 2009), <http://www.economist.com/node/14483896>.

⁴⁴ Buku & Meredith, *supra* note 6.

⁴⁵ Vivienne A. Lawack, *Mobile Money, Financial Inclusion and Financial Integrity: The South African Case*, 8 WASH J.L. TECH. & ARTS 317 (2013).

⁴⁶ Radics, *supra* note 7.

⁴⁷ United Nations Convention on the Illicit Traffic in Narcotic Drugs and Psychotropic Substances, art. 3-5, Dec. 20, 1988, 32 U.S.T. 543, 1582 U.N.T.S. 95 (entered into force Nov. 11, 1990).

⁴⁸ NICOLAS RYDER, FINANCIAL CRIME IN THE 21ST CENTURY: LAW AND POLICY 16 (2011) (The G7 nations included Canada, France, Germany, Italy, Japan, United Kingdom, and United States).

⁴⁹ *History of the FATF*, FIN. ACTION TASK FORCE, <http://www.fatf-gafi.org/pages/aboutus/historyofthefatf/> (last visited Jan. 5, 2013); *FATF Members and Observers*, FIN. ACTION TASK FORCE, <http://www.fatf-gafi.org/pages/aboutus/membersandobservers/> (last visited Jan. 5, 2013).

FATF is not a formal international organization established by a treaty, but rather a very vigorous and surprisingly durable *ad hoc* task force, although it also has the support of the United Nations.⁵⁰ Members of the FATF have committed to implement the recommendations and agreed to be subject to multilateral surveillance, peer review and the publication of the International Cooperation Review Group list (formerly known as the Non-cooperative Countries and Territories list). FATF works to ensure compliance with its Guidelines by requiring member countries to undertake an annual self-assessment, as well as mutual evaluations.

In 2000 and 2001, FATF published lists identifying 23 “non-cooperating countries and territories” that it found were not trying hard enough to fight against global money laundering. After a country was “blacklisted”, FATF worked with its regulators to help them bring their national regulatory systems into compliance with its guidelines. The blacklist’s regulatory bite came from the fact that FATF members in good standing were expected to take “counter-measures” to protect their economies from the risks of money laundering originating in blacklisted countries.⁵¹ The counter-measures required financial institutions in member states to conduct enhanced customer due diligence before engaging in financial transactions with any individuals or entities in blacklisted countries. Given the expense of such enhanced due diligence, the practical result of being placed on FATF’s blacklist was that the volume of financial transactions into and out of a country could be sharply restricted. The FATF blacklist turned out to be more effective at getting the attention of “non-cooperating countries and territories” than its sponsors may have anticipated which in turn unleashed an intense backlash.⁵² When the World Bank and IMF

⁵⁰ S.C. Res. 1617, U.N. Doc. S/RES/1617 (July 29, 2005).

⁵¹ FIN. ACTION TASK FORCE ON MONEY LAUNDERING, REPORT ON NON-COOPERATIVE COUNTRIES AND TERRITORIES 8 (2000), available at http://www.fatf-gafi.org/media/fatf/documents/reports/Initial%20Report%20on%20NCCTs%2002_2000.pdf; 2012 FATF RECOMMENDATIONS, *supra* note 11, at Guideline 19.

⁵² Todd Doyle, *Cleaning Up Anti-Money Laundering Strategies: Current FATF Tactics Needlessly Violate International Law*, 24 HOUS. J. INT’L L. 279, 282 (2002) (“This development is disturbing and suggests a policy redolent of extraterritorial bullying.”).

joined the chorus of protests from developing countries about FATF's lack of transparency and due process in its enforcement efforts, FATF backed off the blacklist strategy after only two years.⁵³

As financial inclusion became a more prominent issue in the development community, it did not take long for concerns to emerge about what impact stringent AML/CTF requirements might have on financial inclusion strategies in developing countries.⁵⁴ As part of the move to Risk-Based Approach to compliance, FATF published reports on how its Risk-Based Approach could be applied to new payment methods including mobile money,⁵⁵ and issued guidance on financial inclusion policies generally.⁵⁶ Whether these efforts by FATF are enough to counteract the impression left from its use of the blacklist to coerce compliance, however, remains unclear. In 2011, the Alliance for Financial Inclusion produced for the G20's Global Partnership for Financial Inclusion a study of the impact of various global standard-setting organizations, such as FATF and the Basel Committee, on financial inclusion policies of five developing countries.

All [five] country case studies identified the FATF as the [standard-setting body] with the most significant impact on regulatory innovation in relation to financial inclusion. The degree of impact

⁵³ Hülse, *supra* note 12.

⁵⁴ JENNIFER ISERN, DAVID PORTEOUS, RAUL HERNANDEZ-COSS & CHINYERE EGWUAGU, AML/CTF REGULATION: IMPLICATIONS FOR FINANCIAL SERVICE PROVIDERS THAT SERVE LOW-INCOME PEOPLE (2005), *available at* http://siteresources.worldbank.org/EXTAML/Resources/396511-1146581427871/AML_implications_complete.pdf.

⁵⁵ FIN. ACTION TASK FORCE, REPORT ON NEW PAYMENT METHODS (2006), *available at* <http://www.fatf-gafi.org/media/fatf/documents/reports/Report%20on%20New%20Payment%20Methods.pdf>; FIN. ACTION TASK FORCE, MONEY LAUNDERING USING NEW PAYMENT METHODS (2010), *available at* <http://www.fatf-gafi.org/media/fatf/documents/reports/ML%20using%20New%20Payment%20Methods.pdf>.

⁵⁶ FIN. ACTION TASK FORCE, FATF GUIDANCE ON ANTI-MONEY LAUNDERING AND TERRORIST FINANCING MEASURES AND FINANCIAL INCLUSION (2011), *available at* <http://www.fatf-gafi.org/media/fatf/content/images/AML%20CFT%20measures%20and%20financial%20inclusion.pdf>.

is mainly driven by concerns regarding the substantial penalties for non-compliance with the FATF Recommendations. The FATF framework is the only standards surveyed in this study with significant punitive measures for non-compliant jurisdictions, most notably the potential loss of correspondent banking relationships. These punitive measures may apply to members as well as non-members. Such penalties may have far-reaching economic impacts on a non-compliant country if it results in economic and financial isolation. As a result, regulators are understandably hesitant to adopt measures that may expose their countries to reputational damage and the potential loss of corresponding bank relationships.⁵⁷

With time, recognition by FATF member countries that financial inclusion promotes the migration from the more opaque cash economy to the more transparent formal economy may help to ameliorate this legacy of mistrust and uncertainty in developing countries.⁵⁸ The 2012 FATF Guidelines reflect the ongoing effort of FATF member countries to emphasize the complementarity of financial inclusion and financial integrity policies.⁵⁹

III. STANDARDS, NETWORKS, AND PLATFORMS

In financial markets, ICT standards play an important role in increasing the “velocity” of assets by reducing transaction processing times; increasing transparency for lenders, borrowers,

⁵⁷ GLOBAL PARTNERSHIP FOR FINANCIAL INCLUSION, GLOBAL STANDARD SETTING BODIES AND FINANCIAL INCLUSION: INSIGHTS AND LESSONS FROM FIVE COUNTRIES: BRAZIL, KENYA, MEXICO, THE PHILIPPINES, AND SOUTH AFRICA 9 (2011), available at <http://www.gpfi.org/sites/default/files/documents/Global%20Standard%20Setting%20Bodies%20and%20FI.pdf>.

⁵⁸ Peter Dittus & Michael Klein, *On Harnessing the Potential of Financial Inclusion* 17 (Bank for Int'l Settlements, Working Paper No. 347, 2011), available at <http://www.bis.org/publ/work347.pdf>.

⁵⁹ See generally Claire Alexandre & Lynn Chang Eisenhart, *Mobile Money as an Engine of Financial Inclusion and Lynchpin of Financial Integrity*, 8 WASH J.L. TECH. & ARTS 285 (2013).

and regulators; reducing transaction costs; improving accuracy of data processing; and reducing compliance monitoring costs for both managers and regulators.⁶⁰ ICT standards are one type of technical standard. Technical standards are documents that establish engineering norms for products or processes. The International Organization for Standardization (ISO) has defined standards as:

[A] document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context[,] . . . based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.⁶¹

Formal standards are developed by standard-developing organizations (SDOs) and are often a type of “public good.” Public goods are goods that are non-rivalrous (meaning that consumption by one person does not diminish the possibility of consumption by another) and non-excludable (meaning that it is not possible to prevent anyone from enjoying its use). Classic examples of public goods include ideas, national defense or broadcast television. Formal standards are often a particular type of public good known as a “club good” which is non-rivalrous but exclusive. Classic examples of club goods include telephone or cable television networks. Formal standards are normally copyrighted by the organization that produced them, and must be purchased by anyone wishing to use them, so they do not normally qualify as pure public

⁶⁰ Electronic Records and Signatures Association, *Electronic Records and Signature Update*, June 5, 2008; Brian Williamson and Philliipa Marks, *Standardization in ICT : Current Economic Perspectives*, in *ICT SHAPING THE WORLD: A SCIENTIFIC VIEW* 199-200 (Gérard Pogorel & Michel Riquidel eds., 2009).

⁶¹ *Standards and Regulations—Definitions*, ISO/IEC INFORMATION CENTRE (June 20, 2011), http://www.standardsinfo.net/info/standards_regulations.html (quoting INT’L STANDARDS ORG., *ISO/IEC GUIDE 2:2004 STANDARDIZATION AND RELATED ACTIVITIES—GENERAL VOCABULARY* (8th ed. 2004)).

goods. Formal or *de jure* standards may be contrasted with *de facto* standards which emerge from practice but which may lack any form of legal recognition. For example, the Microsoft Windows operating system is a *de facto* standard for personal computer software, but it is not a formal standard.⁶² *De facto* standards may function as both “private goods” (i.e., private property) and club goods simultaneously.

From an economic perspective, public goods are often problematic because there are usually insufficient market incentives to produce them in the quantities required by the public.⁶³ For example, a national highway system has many of the characteristics of a public good. A government may choose to make its national highway system non-excludable and pay for its construction with government revenues, or it may permit a private organization to build the highway and then exclude users who do not pay tolls to recapture the costs of its construction. In the absence of either government construction using tax revenues or a license to operate a highway as a toll road, however, a national highway system is unlikely to emerge because private parties would normally have no incentive to build it.

Technical standards function as economic infrastructure that reduces barriers to the dissemination of technological innovation, and increases consumer welfare by ensuring technical interoperability among products made by different producers. As with other public goods, market forces alone may not produce the optimal level or design of technical standards because private parties may prefer to focus their attention on private goods for market production. The economic benefits of proprietary technologies may be concentrated on the owner of the technology while their costs are spread over a large group of users, but with standards, the benefits are spread over a large group of users while the costs are concentrated on a smaller group of producers.

⁶² As a matter of national regulatory culture, regulators in LMEs such as the United States are more willing to treat *de facto* standards as equivalent to formal standards, while regulators in CMEs are more inclined to deny that they are standards at all. That debate is outside the scope of this Article.

⁶³ See generally TYLER COWEN, PUBLIC GOODS AND MARKET FAILURES: A CRITICAL EXAMINATION (1991).

Because they produce widespread benefits, the development and promotion of technical standards are normally pivotal elements of national industrial policy in developed market economies.⁶⁴ By contrast, treating proprietary technologies as *de facto* standards conflates the private nature of proprietary technologies and the public nature of “standards” as that term is defined by ISO.⁶⁵

The governance framework for technical standard setting may vary significantly between LMEs and CMEs, with LMEs favoring a “bottom up” private sector driven approach while CMEs favor a “top down” government orchestrated approach. Although issues related to the governance of technical standard-setting processes may be controversial, there is more of a consensus regarding the costs and benefits of using standards.⁶⁶ The social and economic benefits of standardization include:

- Reducing costs through the simplification of complex processes;
- Reducing learning costs for new producers;
- Allowing producers to exploit economies of scale;
- Lowering transaction costs between transacting parties;
- Promoting market information and confidence by signaling product quality, or the compatibility of products or components;
- Reducing compliance costs; and
- Increasing competition among producers, lowering prices to consumers.

⁶⁴ Jay Tate, *National Varieties of Standardization*, in VARIETIES OF CAPITALISM 442 (Peter A. Hall & David Soskice eds., 2001).

⁶⁵ Microsoft’s decision to convert its proprietary Word technology into a standard in order to block competition from products based on the Open Document Format standard was controversial for this reason. Jason Mick, *Microsoft Wins Document Format Standards Battle*, DAILY TECH (Apr. 2, 2008), <http://www.dailytech.com/Microsoft+Wins+Document+Format+Standards+Battle/article11338.htm>.

⁶⁶ See generally Michelle Egan, *Setting Standards: Strategic Advantages in International Trade*, 13 BUS. STRATEGY REV. 51 (2002).

However, the costs of standardization may also be substantial and include:

- Reducing product variety;
- Imposing costs of achieving compliance with standards and obtaining certification of compliance;
- Imposing one-time switching costs for established products to comply with subsequent standards; and
- Increasing switching costs away from obsolete or sub-optimal standards.

Formal public international standard-setting organizations that may have jurisdiction over ICT technical standards include the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and the International Telecommunications Union (ITU); each of these organizations has a formal, public counterpart in each country that chooses to participate in them. While the processes used by these global technical standard-setting organizations seek to be transparent and inclusive, they may also be slow, bureaucratic, and out of touch with conditions in the markets in which the standards are to be implemented.⁶⁷

Technological change in markets for ICT products may be very rapid, and because consumer demand for new ICT products often depends on their interoperability with other ICT products, there is also a need for rapid development of ICT standards. In order to ensure that ICT standard development can keep pace with rapid technological innovation in global ICT markets, new forms of private international standard-developing organizations known as “consortia” or “fora” have emerged in recent years.⁶⁸ These new

⁶⁷ See generally Costas Andropoulos, Head of Unit, DG Enterprise and Industry, ICT for Competitiveness and Innovation, Presentation at European ICT Standardisation Policy at a Crossroads: A New Direction for Global Success (Feb. 12, 2008), available at http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=3604.

⁶⁸ See generally Jane K. Winn, *US and EU Regulatory Competition and Authentication Standards in Electronic Commerce*, in *NEW APPLICATIONS IN IT STANDARDS* 35 (Kai Jakobs ed., 2006), available at <http://ssrn.com/>

ICT SDOs range in size from a small handful of members working closely together to thousands of members scattered around the world collaborating by means of Internet communications. The Internet Engineering Task Force (IETF), developer of the Transmission Control Protocol/Internet Protocol (TCP/IP) standard which defines the Internet, and the World Wide Web Consortium (W3C) are examples of large, informal ICT standard-developing organizations with members around the world. By contrast, EMVCo, the ICT SDO for the European EMV payments standard, has only four members: American Express, JCB, MasterCard, and Visa. Informal private ICT SDOs are often referred to as consortia, and because they are generally exempt from regulation by national governments, they can often develop standards more quickly and efficiently than formal, public ICT SDOs.⁶⁹

Although consortia may not be formally recognized under international law as a source of technical standards,⁷⁰ what they lack in formal legal status, they often make up for in market power.⁷¹ This will be true if consortia standards define networks

abstract=901324; Carl Cargill, *The Informal Versus the Formal Standards Development Process: Myth and Reality*, in STANDARDIZATION ESSENTIALS: PRINCIPLES AND PRACTICE 257 (Steven M. Spivak & F. Cecil Brenner eds., 2001).

⁶⁹ GREG FITZPATRICK, THE FAILURE OF EUROPEAN ICT STANDARDS POLICY AND A POSSIBLE FUTURE (2003), available at <http://www.itkommissionen.se/doc/650.html>.

⁷⁰ The status of standards issued by formal international SDOs such as ISO, IEC and ITU comes in part from the recognition that their adoption as national standards provides countries with a defense to claims brought under the WTO Technical Barriers to Trade Agreement. See generally Scott Kennedy, *The Political Economy of Standards Coalitions: Explaining China's Involvement in High-Tech Standards Wars*, 2 ASIA POL'Y 41 (2006).

⁷¹ In principle, ISO does not work directly with consortia. It normally reissues national standards submitted by national standard setting bodies (e.g., ANSI, the British Standards Institute, Association Française de Normalisation (AFNOR), Deutsches Institut für Normung (DIN), Japanese Standards Association, etc.) as international standards, or develops international standards. However, ISO does maintain two back doors—a “fast track” process and a “publicly available submission” process—that under certain circumstances permit consortia to submit standards directly to ISO for review without first getting them adopted by a national standards body.

characterized by strong “network effects.”⁷² Network effects are created when strong positive and negative externalities drive consumers to use only one network, which may give the network operator a dominant market position as well as *de facto* regulatory authority over network participants.⁷³ Markets operating within ICT networks may also be characterized as “multi-sided platforms.”⁷⁴ The operator of a platform market may contribute to the success of the platform by setting prices to attract certain participants to it. Such a strategy consists of imposing high prices on those who have the most interest in the success of the platform, and low prices to those who have the least interest. Classic examples of such pricing strategies include the use of advertising revenues to subsidize the purchase of newspapers by consumers, or selling a video game console at cost, and then setting the price to end users of computer games high enough to subsidize the development of new games.

If a global platform for mobile remittances emerges, and its operators enjoy significant market power based on strong network effects, then national regulators could find themselves under pressure from their own citizens clamoring to enjoy its positive network effects to give such a platform local market access. If a global network operator has enough market power, it may be able to resist pressure to bear the cost of “localizing” its services to comply with regulations in each national market it enters. Under such circumstances, national regulators may be forced to choose between granting citizens access to a global network and exercising their authority in their national markets. This issue has already emerged in global electronic payment services with regard to the authority of global card payment services companies such as Visa and MasterCard to control the terms and conditions under

⁷² See generally CARL SHAPIRO & HAL VARIAN, INFORMATION RULES (1999).

⁷³ Jane K. Winn, *Technical Standards as Data Protection Regulation*, in REINVENTING DATA PROTECTION 191 (Serge Gutwirth et al. eds., 2009), available at <http://ssrn.com/abstract=1118542>.

⁷⁴ Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS'N 990 (2003); DAVID S. EVANS, ANDREI HAGIU & RICHARD SCHMALENSEE, INVISIBLE ENGINES: HOW SOFTWARE PLATFORMS DRIVE INNOVATION AND TRANSFORM INDUSTRIES (2006).

which their services are supplied in different countries around the world.⁷⁵

IV. GOVERNANCE AND REGULATORY COMPETITION

Regulatory competition refers to competition among different sovereigns for mobile economic resources such as labor and capital by offering different regulatory regimes to attract them.⁷⁶ “Race to the bottom” regulatory competition strategies generally involve regulatory regimes that externalize the costs of attracting mobile economic resources onto someone other than the owner of the resource either inside or outside of a sovereign’s territory. For example, using weak labor and environmental protection laws to attract foreign investment may externalize some production costs onto workers and citizens affected by pollution within that country while allowing foreign investors to enjoy increased profits as a result of lower nominal production costs. “Race to the top” or the “California effect” is the opposite strategy: a sovereign with market power can require producers to internalize more production costs than other sovereigns do. California used this strategy successfully when it required the use of catalytic converters on all cars sold in California. When other sovereigns followed California’s example, then producers that had adapted to the stricter California standard had a competitive advantage over producers that had not yet done so. The analysis of regulatory competition becomes even more complex when national governments are competing with non-state and hybrid regulators

⁷⁵ China recently suffered a setback in its national strategy of limiting Visa and MasterCard’s access to domestic Chinese markets for electronic payment services by promoting a domestic competitor known as UnionPay. Panel Report, *China—Certain Measures Affecting Electronic Payment Services*, WT/DS413/R (July 16, 2012). The Indian government may have more luck with its effort known as RuPay to disintermediate Visa and MasterCard in the Indian domestic payment market. *Rupay Card Launched in India*, RUPAY CARD (Sept. 30, 2011, 7:24 AM), <http://www.rupaycard.info/2011/09/rupay-card-launched-in-india.html>.

⁷⁶ Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956).

whose scope of authority is ambiguous and whose regulatory tools are different.⁷⁷

With regard to a global network for mobile remittances, regulatory competition could arise among both developed and developing countries to shape the governance framework for mobile money networks. In addition to network externalities and the economics of platform markets, regulatory competition in global markets is shaped by the interaction of nation states with new private global governance institutions by a new trend:

[T]he delegation of regulatory authority from governments to a single international private-sector body that, for its area of expertise, is viewed by both public and private actors as the obvious forum for global regulation. In that particular issue area, such a private body is what [Büthe and Mattli] refer to as the focal institution for global rulemaking. This simultaneous privatization and internationalization of governance is driven, in part, by governments' lack of requisite technical expertise, financial resources, or flexibility to deal expeditiously with ever more complex and urgent regulatory tasks.⁷⁸

The FATF is clearly a “focal institution of global rule-making” for financial integrity, while the Society for World-Wide Interbank Telecommunications (SWIFT) is a focal institution for global remittances executed by banks. It is unclear now what institution, if any, will emerge as the focal institution for the emerging global mobile remittance network.

In the information technology field, the question of what kind of “focal institution of global rule-making” should govern the Internet remains a matter of considerable and persistent international controversy. The current focal institutions for the

⁷⁷ Burkard Eberlein, Kenneth W. Abbott, Julia Black, Errol Meidinger & Stepan Wood, *Transnational Business Governance Interactions: Conceptualization and Framework for Analysis*, 7 REG. & GOVERNANCE (forthcoming 2013).

⁷⁸ BÜTHE & MATTLI, *supra* note 18, at 5.

Internet include the IETF and W3C, which are informal collaborative networks of individuals and organizations, and the Internet Corporation of Assigned Names and Numbers (ICANN), a California non-profit corporation backed by the U.S. government. While many citizens and governments in LMEs support the management of the Internet by IETF, W3C and ICANN precisely because they are private, many citizens and governments in many CMEs (as well as authoritarian societies) believe strongly that the ITU as a formal, public and international SDO should govern the Internet instead.⁷⁹

In specific ICT markets, either conventional SDOs or consortia may play the role of focal institutions. The Institute of Electrical and Electronics Engineers (IEEE) is a conventional SDO, the modern successor to electrical industry SDOs going back to the nineteenth century. The IEEE is accredited by the American National Standards Institute (ANSI), which means that it complies with the due process requirements contained in ANSI Essential Requirements.⁸⁰ The IEEE developed the IEEE 802 family of local area network standards for wireless communications that includes technologies marketed to the public as Wi-Fi. After the IEEE 802.11 standard was developed, however, promotion of the Wi-Fi concept was turned over to the Wi-Fi Alliance, a consortium which is not ANSI accredited. The Wi-Fi Alliance manages the use of the Wi-Fi trademark and logo, and certifies that products are compliant with the standard, in addition to developing new standards in response to changing market conditions. The Wi-Fi Alliance has two classes of voting members: a small group of “sponsor members” with more authority over decision making, and “regular members.” It also has affiliate members with limited voting rights

⁷⁹ Geoff Houston, *ICANN, the ITU, WSIS, and Internet Governance*, 8 INTERNET PROTOCOL J., Mar. 2005, at 15-28, available at http://www.cisco.com/web/about/ac123/ac147/archived_issues/ipj_8-1/internet_governance.html.

⁸⁰ AM. NAT'L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS (2012), available at http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/2012%20ANSI%20Essential%20Requirements%20and%20other%20Updated%20Procedures/2012_ANSI_Essential_Requirements.pdf.

and adopter members without voting rights.⁸¹ The Bluetooth Special Interest Group (SIG) develops standards for short-range, low-cost wireless communication technology for use with mobile devices and also promotes the adoption of the technology. Even though the Bluetooth SIG generally maintains open, transparent processes, it also maintains different classes of membership, and restricts admission: individuals are not allowed to join at all, and control over the most important management decisions is retained by seven “promoter” companies (Ericsson, Intel, Lenovo, Microsoft, Motorola, Nokia, and Toshiba).⁸² GS1 is the most important international radio frequency identification (RFID) SDO, and is considered to be a consortium.⁸³ It is the successor to the Uniform Code Council and EAN International, the organizations that promoted the use of barcode technology since the 1970s. It has affiliated organizations in over 100 countries, and participation in GS1 activities is managed through the local affiliates. The GSM Association (GSMA), the main SDO and industry association for mobile telephone services around the world, is also a consortium.⁸⁴ Full membership in the GSMA is limited to wireless network operators, and other businesses in one

⁸¹ *Bylaws of the Wi-Fi Alliance*, WI-FI ALLIANCE (Jan. 2012), http://www.wi-fi.org/sites/default/files/uploads/files/WFA_Bylaws_20120106.pdf.

⁸² *SIG Membership Introduction*, BLUETOOTH SIG MEMBER SITE, http://www.bluetooth.org/apps/content/?doc_id=44513 (last visited Dec. 15, 2012).

⁸³ *ICT Standards Consortia*, EUR. COMM. FOR STANDARDIZATION, <http://www.cen.eu/cen/sectors/sectors/iss/consortia/pages/default.aspx> (last visited Jan. 5, 2013). In 2003, GS1 formed EPCglobal, a global membership organization that works to promote the adoption of “electronic product codes” and RFID technology. EPCglobal develops standards, provides conformity certification for products, accredits other organizations to provide conformity testing, and provides training, marketing and political advocacy for RFID products and services. *Electronic Product Code (EPC): An Overview*, GS1 (Jan. 2007), http://www.gs1.org/docs/epcglobal/an_overview_of_EPC.pdf.

⁸⁴ *Standard Setting Organizations and Standards List: Telecom*, CONSORTIUMINFO.ORG, <http://www.consortiuminfo.org/links/linkscats.php?ID=26> (last visited Jan. 5, 2013).

of four categories are eligible to join as associate members, but individuals cannot join.⁸⁵

The whole idea of an ICT standards consortium originated in the United States, so it is not surprising that the official U.S. Standard Strategy treats the work of ICT consortia as equivalent to the work of formal SDOs.⁸⁶ This openness to treating consortia and formal public SDOs as equivalent is generally limited to LMEs, however. Until very recently, European regulators have been hostile to the idea of recognizing standards developed by consortia in legislation or public procurement, preferring instead to rely on international standards issued by formal public SDOs such as ISO or ITU, or standards developed by formal European SDOs.⁸⁷ European regulators have justified their reluctance to embrace consortia standards by noting the success of the European CME approach to ICT standardization in the case of GSM technology.⁸⁸ Since the success of GSM, however, there have not been many major successes for the European CME model of ICT standardization in global markets, making it more difficult for EU regulators to avoid working with consortia standards. In 2011, the Commission announced its intention to permit reference to consortia standards in EU regulations and public procurement, provided that the processes by which those standards were

⁸⁵ *Types of Membership*, GSMA, <http://www.gsma.com/membership/types-of-membership/> (last visited Jan. 5, 2013).

⁸⁶ AM. NAT'L STANDARDS INST., UNITED STATES STANDARD STRATEGY 3 (3d ed. 2010), available at http://www.ansi.org/standards_activities/nss/usss.aspx ("Global standardization goals are achieved in the United States through sector-specific activities and through alliances and processes provided by companies, associations, standards developing organizations, consortia, and collaborative projects.").

⁸⁷ European formal SDOs are very similar in structure to international formal SDOs: the European Committee for Standardisation (CEN), which corresponds to ISO, the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI) which correspond to the ITU; cooperation between CEN and ISO is governed by the Vienna Agreement and cooperation between CENELEC and IEC is governed by the Dresden agreement. See generally Winn, *supra* note 20.

⁸⁸ Jacques Pelkmans, *The GSM Standard: Explaining a Success Story*, 8 J. EUR. PUB. POL'Y 432 (2001).

developed meet European due process standards:

The selected ICT standards will complement European standards and must comply with quality criteria. Those criteria, which address both the standards developing processes and the standards themselves, cover matters such as openness, transparency and neutrality as well as imposing the same minimum requirements as applied by the ESOs for the treatment of intellectual property (IP) rights.⁸⁹

The EU quality criteria for consortia due process come from the Code of Good Practice for the Preparation, Adoption and Application of Standards, Annex 3 to the WTO Agreement on Technical Barriers to Trade.⁹⁰

The European Union is clearly engaged in a “race to the top” regulatory competition strategy with regard to recognition of consortia ICT standards. While critics of its standards strategy might view the United States as engaged in a “race to the bottom” by permitting ICT consortia to pursue market opportunities unencumbered by social regulations, supporters of the U.S. approach would characterize it as “bottom up” (i.e., populist rather than “top down” or bureaucratic) and market-driven.⁹¹ European regulators are calculating they can use access to the European Internal Market for leverage in their regulatory competition with the United States to influence the character of the global information economy. If this strategy is not successful, then the

⁸⁹ *Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: A Strategic Vision for European Standards: Moving Forward to Enhance and Accelerate the Sustainable Growth of the European Economy by 2020*, at 16, COM (2011) 311 final (Jan. 6, 2011), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0311:FIN:EN:PDF>.

⁹⁰ Comm. on Technical Barriers to Trade, *Decisions and Recommendations adopted by the Committee Since 1 January 1995*, G/TBT/1/Rev.8 (May 23, 2000), available at <http://www.astm.org/GLOBAL/images/wto.pdf> (including decisions of the Committee on Principles for the Development of International Standards, Guides, and Recommendations).

⁹¹ See generally Winn, *supra* note 73.

architecture of the global information economy will continue to be dominated by U.S. standards policy.

If the emerging global mobile remittance architecture becomes a platform market as well as a network supported by strong network effects, then regulators in developed and developing CMEs may find it difficult to exercise regulatory authority over its operation within their borders. This is because the private operator of a successful ICT-based platform has considerable discretion with regard to the terms and conditions of access to the platform market, and the prices of services offered through the platform.⁹² Once a platform based on global ICT networks takes root within a domestic economy, regulators may find it difficult (although not impossible) to mandate changes in the way the platform operates.⁹³

A market-driven globally interoperable mobile remittance network is already emerging. Visa and GSMA are partnering with financial institutions, mobile network operators, handset manufacturers, technology service providers, and industry associations around the world to build that global architecture.⁹⁴ Because this effort is being spearheaded by the private company that administers the largest proprietary payment card network in the world,⁹⁵ and a private ICT consortium, its roots are clearly in the LME environment. This is not the only source of standards for mobile remittances, however. For example, the Government of India is actively promoting the development of a domestic Indian mobile payments architecture based on open standards.⁹⁶ If the

⁹² See generally EVANS ET AL., *supra* note 74.

⁹³ DAVID S. EVANS, INTERCHANGE FEES: THE ECONOMICS AND REGULATION OF WHAT MERCHANTS PAY FOR CARDS vi (2011), available at <http://origin.library.constantcontact.com/download/get/file/1102767390831-1382/Interchange-Fees-web-2.pdf> (noting that the United States, European Union, and Australia have all taken action in recent years to force credit card networks to change their pricing policies).

⁹⁴ Bruce Burke, *Towards a Global, Interoperable Mobile Money Network*, MOBILEPAYMENTSTODAY.COM (July 22, 2011), <http://www.mobilepayments.com/blog/6013/Towards-a-global-interoperable-mobile-money-network>.

⁹⁵ Panel Report, *supra* note 75, at § 7.39 (“[I]t is the [Electronic Payment Service] provider’s intellectual property that enables the switching of the transaction and supports the electronic payment process, the transaction is governed by the EPS provider’s rules and procedures . . .”).

⁹⁶ *Indian Banks Collaborate on Merchant Payments Platform*, GTNEWS

Indian CME approach to standardizing mobile payments is successful within the Indian domestic market, it might appeal to regulators in other developing countries.⁹⁷

V. INTEGRITY BY DESIGN

For national regulators in developing countries who are working to promote financial inclusion, significant challenges arise in two broad areas of AML/CTF compliance: establishing identity under agreed “know your customer” (KYC) or “customer due diligence” (CDD) rules; and “suspicious transaction reporting” under agreed protocols to detect suspect patterns of financial transfers.⁹⁸ For developing countries such as China and Kenya that had strong national identity systems in place long before AML/CTF norms were even invented, it might be possible to use ICT standards to rationalize KYC processes and make them more efficient. For countries such as India that have never had a strong national identity system, the Risk-Based Assessment approach in the 2012 FATF Guidelines now permits national regulators and mobile payment service providers to develop alternative KYC protocols for which ICT standards may have little relevance.⁹⁹

(Sept. 14, 2012), http://www.gtnews.com/News/2012/Indian_Banks_Collaborate_on_Merchant_Payments_Platform.html.

⁹⁷ RADHA SOMAKUMAR & THOMAS MATHEW, MOBILE MONEY, FINANCIAL INCLUSION, & FINANCIAL INTEGRITY CASE STUDY: INDIA (2012), *available at* <https://files.law.washington.edu/other/MobileMoney/>.

⁹⁸ Dittus & Klein, *supra* note 58.

⁹⁹ For example, Reserve Bank of India KYC regulations permit someone without any other identity documents to use a letter from a recognized public authority or public servant verifying the identity and residence of the customer in order to open a bank account. *Master Circular – ‘Know Your Customer’ (KYC) Guidelines – Anti Money Laundering Standards*, RESERVE BANK OF INDIA (July 1, 2009), http://rbi.org.in/scripts/BS_CircularIndexDisplay.aspx?Id=5083. India is currently building a national digital identity system. *See generally* Planning Comm’n, *Unique Identification Authority of India*, UIDAI, <http://uidai.gov.in/> (last visited Jan. 5, 2013); *see also* Louis de Koker, *Will RICA’s Customer Identification Data Meet Anti-Money Laundering Requirements and Facilitate the Development of Transformational Mobile Banking in South Africa?: An Exploratory Note*, CTR. FOR FIN. REGULATION & INCLUSION (Oct. 7, 2010), <http://www.cenfri.org/documents/>

Because national endowments with regard to identifying citizens vary so widely across developing countries, ICT standards may be more useful in lowering AML/CTF compliance costs if they focus on “suspicious activity reporting.” Financial institutions in developed countries already use sophisticated analytics on large databases of transactional information to detect patterns of behavior that might indicate money laundering.¹⁰⁰

Historically, advanced analytics have been used, among other things, to analyze large data sets in order to find patterns that can help isolate key variables to build predictive models for decision-making. Companies use advanced analytics with data mining to optimize their customer relationships; law enforcement agencies use advanced analytics to combat criminal activity from terrorism to tax evasion to identify theft. Naturally, these methods have their limits; for example, data mining in search of new patterns in counter-terrorism may yield little value.¹⁰¹

If data formats and analytics for suspicious activity reporting related to mobile payments could be standardized, that might reduce barriers to the use of those same technologies in developing countries. Just as falling prices of telephone switching equipment and handsets helped spark the mobile telephony revolution in developing countries, falling prices for servers, processors, open source database software designed to work with very large databases, high bandwidth networks, cloud computing and other flexible resource allocation arrangements might make it possible

Financial%20inclusion/2010/RICA%20impact%20on%20financial%20inclusion_final.pdf.

¹⁰⁰ John Beck & John Morton, *How Banks Can Make the Most of Data*, THE BANKER (June 1, 2012), <http://www.thebanker.com/Tech-Trading/Technology/How-banks-can-make-the-most-of-data?ct=true> (“Today, most banks are using analytics very much on a departmental or a business unit basis, such as in their credit risk, market risk or anti-money laundering capabilities.”).

¹⁰¹ Ann Cavoukian & Jeff Jonas, *Privacy by Design in the Era of Big Data*, PRIVACY BY DESIGN, 5 (June 8, 2012), http://privacybydesign.ca/content/uploads/2012/06/pbd-big_data.pdf.

for managers and regulators in developing countries to enjoy at least some of the benefits of “Big Data.”¹⁰² Increasing the use of data analytics among mobile money service providers might be one strategy to help regulators and service providers in developing countries take full advantage of the flexibility offered with the Risk-Based Approach in the 2012 FATF Guidelines. However, because even sophisticated business enterprises in developed countries find it difficult to extract the full value of “Big Data,”¹⁰³ it is clear that regulators and service providers in developing countries would require not just ICT standards but also considerable technical assistance in order to deploy similar technologies effectively under more difficult circumstances.

Current best practices in the development of information technology indicate that factors like privacy and security, or by analogy, financial integrity, should be treated as requirements from the beginning of the design process in order to be effective. Ann Cavoukian, Privacy Commissioner of Ontario, Canada, coined the term “Privacy by Design” to describe a rigorous, proactive approach to information privacy.¹⁰⁴ The concept includes early mitigation of privacy concerns when developing information technologies and systems, as well as continued focus on privacy concerns throughout the entire information life cycle. The notion of Privacy by Design was always consistent with EU data protection law principles, and has now been embraced by EU regulators as a key element of their approach to thinking about the design of information technology and privacy.¹⁰⁵ The U.S. Federal Trade Commission has now incorporated the idea into its

¹⁰² Dan Briody, *Big Data: Harnessing a Game-Changing Asset*, SAS (Sept. 2011), http://www.sas.com/resources/asset/SAS_BigData_final.pdf.

¹⁰³ Andrew McAfee & Erik Brynjolfsson, *Big Data: The Management Revolution*, HARV. BUS. REV., Oct. 2012, at 60 (to reap the rewards of big data analytics will require changes in leadership, talent management, technology, decision-making processes, and company culture).

¹⁰⁴ CAVOUKIAN, *supra* note 27.

¹⁰⁵ Viviane Reding, Vice-President, European Comm’n, Speech at the Round-table High Level Conference on Mobilising the Cloud, Privacy in the Cloud: Data Protection and Security in Cloud Computing (Dec. 7, 2011), available at http://europa.eu/rapid/press-release_SPEECH-11-859_en.htm.

information privacy strategy as well.¹⁰⁶ Alan Paller, of the SANS Institute, makes a similar point about computer security generally when he argues that security only works if it is “baked in,” rather than being “bolted on” after a product has been completed.¹⁰⁷ Support for this “end-to-end” approach to privacy and security is growing among some leading information technology companies, and has been incorporated into their product development processes, although this change in attitude in the private sector is far from universal.¹⁰⁸

Recent attempts by the global payment card industry to upgrade security on its existing network provide a cautionary tale of how difficult and controversial the process of retrofitting privacy and security technologies can be. In 2004, the global credit card industry launched the Payment Card Industry Data Security Standard (PCI DSS) as a joint industry effort to respond to pressure from regulators in countries with strong data protection laws about the security of personal information in their systems, and to reduce the costs associated with large data breaches involving the loss of consumer payment card information by retail merchants. The PCI DSS standards are intended to establish a mandatory minimum level of security for retail merchants processing consumer card data, and range from basic common sense (do not use vendor-supplied default passwords) and modern risk management best practices (maintain a written security policy and regularly test security), to very specific requirements (use a firewall, issue a unique ID to each person accessing the system). Early versions of the PCI DSS standard were widely criticized by retail merchants as expensive and ineffective, and for having been developed by the credit card networks and banks without adequate consultation with the retail merchants expected to implement them.¹⁰⁹ Even after the PCI DSS standard-setting process was

¹⁰⁶ FED. TRADE COMM’N, PROTECTING CONSUMER PRIVACY IN AN ERA OF RAPID CHANGE: RECOMMENDATIONS FOR BUSINESSES AND POLICYMAKERS (2012), available at <http://www.ftc.gov/opa/2012/03/privacyframework.shtm>.

¹⁰⁷ Alan Paller, *Cisco Wins National Cybersecurity Innovation Award*, SANS (Nov. 3, 2011), <https://www.sans.org/press/cisco-wins-ncia.php>.

¹⁰⁸ Rubinstein, *supra* note 27.

¹⁰⁹ Michael Garry, *PCI Seeks Retailer Feedback*, SUPERMARKET NEWS (July

opened up to greater participation by all stakeholders, and the investment of many years of effort in implementation, independent surveys suggest widespread non-compliance with PCI DSS standards persists even in developed countries.¹¹⁰ Litigation in the United States has even called the legality of the scheme into question: when an American bank exercised its right under the scheme to fine a merchant for its alleged failure to comply with the standard, the merchant filed suit against the bank, highlighting the lack of accountability and transparency in the administration of the PCI DSS standards, and the bank's failure to prove that the security breach had originated with the merchant in the first place.¹¹¹

While embracing the notion of "Integrity by Design" for the development of a global mobile remittance architecture might reduce the risks associated with trying to "bolt on" financial integrity functions after the network is already operational, such an effort would also introduce new risks. Whenever the requirements for standards are expressed too broadly, or incorporate too many politically contested factors, then the odds that the resulting standards will be widely adopted usually decline unless adoption is mandated by a regulator. At present, there is no global regulator capable of mandating compliance with ICT technical standards for mobile remittances that incorporate financial integrity requirements. If the adoption of ICT technical standards for global

6, 2009), <http://supermarketnews.com/retail-amp-financial/pci-seeks-retailer-feedback>.

¹¹⁰Mathew J. Schwartz, *67% Of Companies Fail Credit Card Security Compliance*, INFORMATIONWEEK (April 20, 2011), <http://www.informationweek.com/security/management/67-of-companies-fail-credit-card-security/229401946> ("PCI may have an image problem. According to the study, 50% of security professionals view PCI as a burden, and 59% don't think it helps them improve security. Furthermore, comparing this study with the inaugural one conducted in 2009, the number of respondents who said they had sufficient resources to comply with PCI dropped from 40% to 38%."); John Leyden, *Firms Are RUBBISH at Payment Security: One in Five Bothered to Meet Standards*, THE REGISTER (Sept. 29, 2011), http://www.theregister.co.uk/2011/09/29/pci_compliance_survey/.

¹¹¹Kim Zetter, *Rare Legal Fight Takes On Credit Card Company Security Standards and Fines*, WIRED.COM (Jan. 11, 2012), <http://www.wired.com/threatlevel/2012/01/pci-lawsuit>.

mobile remittances is left up to the market and individual national regulators, then the more narrowly such technical standards focus on market demand, the greater their chance of widespread adoption.

Developed countries are only now starting to try to incorporate social requirements like privacy and security into the design of ICT networks from the beginning.¹¹² Trying to incorporate social requirements like financial inclusion and financial integrity into ICT technical standards for global mobile remittances in order to achieve “Integrity by Design” in developing countries might be an even more challenging task than trying to achieve “Privacy by Design” in developed countries, and would be undertaken with even fewer resources. Because market conditions in developing countries may be more diverse and complex than market conditions in developed countries, merely developing ICT technical standards for interoperability may prove difficult, and adding AML/CFT compliance obligations to the scope of the standard-setting activity might doom it to failure.

VI. CO-REGULATION FOR GLOBAL MARKETS

In Europe, when the work of legislatures and standard-setting organizations is formally and explicitly coordinated, the resulting process is known as “co-regulation.” In the United States, similar processes are more likely to be referred to as “self-regulation.”¹¹³

¹¹²For example, the EU General Data Protection Regulation proposed in 2012 would mandate “data protection by design and by default” in the processing of personal information, which has been controversial. *Commission Proposal for a Regulation of the European Parliament and of the Council on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation)*, COM (2012) 11 final (Jan. 25, 2012), available at http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf.

¹¹³The delegation of U.S. federal securities regulation authority to “self-regulatory organizations” such as the New York Stock Exchange or National Association of Securities Dealers (NASD) is a clear example of this. JOEL SELIGMAN, *THE TRANSFORMATION OF WALL STREET* 185-86 (3d ed. 2003) (1939 decision to delegate regulatory powers to NASD because of skepticism about government competence to regulate many aspects of the securities market).

However, because economic “self-regulation” even in LMEs takes place in the context of continuous dialogue between the state and private-sector actors, and involves at least some degree of implicit or explicit delegation of state authority, the term “co-regulation” could apply to what is referred to as “self-regulation” in the United States, but would often be more accurate. For this reason, the term “co-regulation” as used in this Article should be understood as including most of what is referred to as self-regulation in LMEs.

Since the rise of the modern industrial standards movement in Western nations in the late nineteenth century,¹¹⁴ governments of economically developed countries have developed some kind of administrative “interface” between the institutions that develop technical standards and the formal, public legal order, including courts and legislatures. As in other areas of economic regulation, the LME countries tend to favor an *ad hoc* piecemeal approach to coordinating legislation with relevant technical standards, while CME countries tend to favor a formal, systematic approach.¹¹⁵ The diversity of co-regulation approaches in the United States is a reflection of the diversity of standard-setting organizations that are recognized under U.S. law.¹¹⁶ For example, although the official U.S. Standards Strategy largely consists of letting the private sector lead,¹¹⁷ some standards are issued as mandatory government regulations, such as the U.S. Department of Agriculture’s standard for what constitutes “milk.”¹¹⁸ Private-sector standards normally

¹¹⁴ See generally SAMUEL KRISLOV, HOW NATIONS CHOOSE PRODUCT STANDARDS AND STANDARDS CHANGE NATIONS (1997). The rise of the modern industrial standards movement corresponds to the “second industrial revolution” that began in the mid-19th century and continued through the early 20th century. See generally JOEL MOKYR, THE SECOND INDUSTRIAL REVOLUTION 1870–1914 (1998), available at <http://faculty.wcas.northwestern.edu/~jmokyr/castronovo.pdf>.

¹¹⁵ See generally Tate, *supra* note 64.

¹¹⁶ OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, OTA-TCT-512, GLOBAL STANDARDS: BUILDING BLOCKS FOR THE FUTURE 14 (1992), available at <http://www.fas.org/ota/reports/9220.pdf>.

¹¹⁷ AM. NAT’L STANDARDS INST., UNITED STATES STANDARD STRATEGY 5 (3d ed. 2010), available at http://www.ansi.org/standards_activities/nss/uss.aspx.

¹¹⁸ 7 C.F.R. § 1000.15 (2012) (“[F]luid milk product means any milk products containing less than 9 percent butterfat intended to be used as

function only as voluntary guidelines for compliance with government regulations, but may be converted into mandatory regulations by government action.¹¹⁹ For example, when the Consumer Product Safety Commission decided to set mandatory minimum safety standards for children's markers, it simply re-issued the voluntary, consensus standard already adopted by industry as a mandatory regulation.¹²⁰ The National Technology Transfer and Advancement Act of 1995 directs U.S. government agencies to use standards developed by voluntary consensus bodies whenever available in lieu of government-developed standards to accomplish its regulatory and administrative objectives. For example, the U.S. Food and Drug Administration has a program that permits private-sector parties to request "safe harbor" status for voluntary private regulations, permitting them to be cited in applications for pre-market approval for medical devices in lieu of government standards.¹²¹

The situation in most European countries, by contrast, is much simpler because most national technical standards are set by a national standards body that works closely with government economic planning departments, as well as with the European

beverages.”).

¹¹⁹ See, e.g., *Veeck v. S. Bldg. Codes Cong. Int'l*, 293 F.3d 791 (5th Cir. 2002).

¹²⁰ A private industry association, the Arts & Creative Materials Institute, began developing voluntary safety standards for the children's art market in the 1940s; one of their standards was later taken up by the D01.57 Subcommittee of the D01 Technical Committee of the American Society for Testing and Materials (an ANSI accredited SDO) and issued as ASTM D-4236 in 1983, before being adopted by the U.S. Consumer Product Safety Commission under the 1988 Labeling of Hazardous Art Materials Act as a mandatory safety regulation for markers in the U.S. market and codified at 16 C.F.R. § 1500.14(b) (2012).

¹²¹ The U.S. Food and Drug Administration maintains a database of all voluntary, consensus standards that it has designated as equivalent to government standards; private parties are free to reference them in market approval applications but are not required to do so. *Guidance for Industry and FDA Staff – Recognition and Use of Consensus Standards*, FED. TRADE COMM'N (Sept. 17, 2007), <http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm077274.htm>.

standards organizations: CEN, CENELEC and ETSI.¹²² At the European Union level, a very successful co-regulatory framework known as the “New Approach” to standardization was developed in the 1980s to promote the Internal Market by reducing technical barriers to trade among member states.¹²³ The New Approach was devised to end the gridlock that had characterized efforts to harmonize technical standards in the Internal Market in the 1970s.¹²⁴ That old approach favored mandatory harmonization to a single standard, maximizing the problems of transition from many existing national standards to a single new European standard, thus fueling opposition from almost all stakeholders every step of the way. The New Approach required one of the European standards bodies to develop a standard that created a voluntary “safe harbor” for products that were certified compliant with it, permitting any producer who wanted to continue using national standards without the presumption of compliance to do so. The scope of the reference standard also only covered “essential requirements.” Each New Approach standard was developed to support a Directive, and the link between the technical standard and the legislation was established by publishing notices in the Official Journal rather than re-issuing the technical standard itself as legislation. The result was a loose coupling of traditional legislative processes with voluntary, consensus technical standard-setting processes that made it easier to accommodate technological innovation and also reduced statutory obsolescence caused by mandatory regulations based on standards that had become outdated.

The economies in countries where mobile money as a financial inclusion strategy is likely to have the most impact in terms of economic development are predominantly rural and agricultural so links between the state and modern technical standard-setting

¹²² See generally *European Standards Organizations (ESOs)*, CENELEC, <http://www.cenelec.eu/aboutcenelec/whoweare/europeanpartners/index.html> (last visited Jan. 5, 2013).

¹²³ Council Directive 83/189/EEC, Laying Down a Procedure for the Provision of Information in the Field of Technical Standards and Regulations, 1983 O.J. (L 109) 8 (EC), amended by Directive 98/48/EC of the European Parliament and of the Council of 20 July 1998, 1998 O.J. (L 217) 18 (EC).

¹²⁴ MICHELLE EGAN, *CONSTRUCTING A EUROPEAN MARKET: STANDARDS, REGULATION, AND GOVERNANCE* (2002).

institutions will normally be weak or simply non-existent. Some developing countries have developed an interface between government and technical standard-developing institutions, however, and in those countries, there is some evidence that the familiar LME versus CME distinction can be observed. In the case of M-Pesa, Kenya (a developing LME) pursued a more flexible, *ad hoc* market-oriented approach.¹²⁵ By contrast, in India (a developing CME) the central government has set a national open standards strategy in addition to financial inclusion and financial integrity strategies, and is working on a national mobile payment interoperability standard as part of its strategy of modernizing its payment systems generally.

More recently, another “co-regulatory” framework emerged in the European Union within which technical standards and legislation are even more loosely coupled.¹²⁶ The “Single Euro Payment Area” (SEPA) is the name applied to a public-private initiative in Europe to make the market for cross-border Euro transfers more efficient. When the Euro was launched in 1999, the bank clearing and settlement systems of different Eurozone member states were not interoperable because each country relied on separate legacy computer systems. Before the launch of the Euro, the banks had used the lack of technical interoperability as a justification to charge high fees for cross-border electronic funds transfers (EFTs). After the launch of the Euro, the Commission tried unsuccessfully to persuade the banks to lower their cross-border fees for Euro transfers. The banks resisted because merely adopting a new currency would not suddenly make their computer systems interoperable, so their actual costs for processing cross-border Euro transfers remained high. The Commission responded by issuing Regulation 2560/2001 prohibiting banks in the Eurozone from charging higher fees for cross-border Euro EFTs than for domestic Euro EFTs.¹²⁷ As a result, because domestic EFT

¹²⁵ Buku & Meredith, *supra* note 6.

¹²⁶ Agnieszka Janczuk, *Legislative Development: The Single Payments Area in Europe*, 16 COLUM. J. EUR. L. 321, 335 (2010) (“[O]ne could characterize it as a scheme of co-regulation . . .”).

¹²⁷ Parliament and Council Regulation (EC) 2560/2001, Cross-Border Payments in Euro, 2001 O.J. (L 344) 13, subsequently updated as Parliament

fees were generally very low, or in some countries had even been set at zero to encourage customers to stop paying by check, banks in the Eurozone began losing money on all cross-border Euro transfers.

In 2002, the major Eurozone banks responded by forming the European Payment Council, an industry trade association and standard-setting organization. Its membership structure is similar to that of an ICT consortium: membership is voluntary, but restricted to banks and European banking industry associations.¹²⁸ The EPC's mission is to promote and support SEPA,¹²⁹ and so it maintains a close dialogue not only with its member banks, but also with EU regulators. To solve the cross-border interoperability problem, the EPC develops "schemes" that combine technical engineering specifications with harmonized business processes.¹³⁰ The SEPA Credit Transfer and Direct Debit schemes include ICT interoperability standards within the ISO 20022 framework as well as business process rules. In addition, EU banks are required to provide their customers with bank account numbers in the "International Bank Account Number" format for use with cross-border Euro transfers.¹³¹

The EPC originally set up informal "councils" to solicit input from non-bank stakeholder groups such as end users, but they produced mixed results. While the SEPA Credit Transfer scheme

and Council Regulation (EC) 924/2009, Cross-Border Payments in the Community, at recital 5, 2009 O.J. (L 266) 11.

¹²⁸ *Charter of the European Payments Council*, EUR. PAYMENTS COUNCIL, § 7.1 (Dec. 15, 2010), http://www.europeanpaymentscouncil.eu/knowledge_bank_detail.cfm?documents_id=337.

¹²⁹ *Id.* at § 2.

¹³⁰ *What Is a Payment Scheme*. EUR. PAYMENTS COUNCIL, http://www.europeanpaymentscouncil.eu/content.cfm?page=what_is_a_payment_scheme_sepa_customers (last visited Jan. 5, 2013).

¹³¹ Article 37 of the PSD states that European bank customers must be provided with unique identifiers for beneficiaries of cross-border Euro transfers. Parliament and Council Directive 2007/64/EC, Payment Services in the Internal Market, 2007 O.J. (L 319). The "unique identifier" used in SEPA is the IBAN, which is based on ISO 13616-1:2007 Financial services - International bank account number (IBAN). Payments Market Practice Grp., *White Paper on Use of IBAN in International Payments*, SWIFT (June 2011), http://www.swift.com/resources/documents/PMPG_IBAN_Whitepaper_July_2011.pdf.

proved to be relatively uncontroversial, harmonizing business practices for direct debits from customer accounts proved to be very controversial.¹³² Users who felt excluded from EPC processes for drafting schemes and dissatisfied with the design of the SEPA direct debit scheme complained to the Commission that the EPC was not open and transparent. In 2009, the Commission summarized the governance challenges facing the EPC in the following terms:

The EPC has made progress in balancing the interests of different stakeholders, but it must operate in a more open manner to avoid possible *foreclosure effects* and take into account the interests of all stakeholders, including non-banking stakeholders, payment institutions and users. Greater transparency, adequate time for consultation and early involvement of all stakeholders, in particular users, in the planning and design of future initiatives need to be ensured.¹³³

The SEPA Council was launched in 2010 with the mandate of promoting the implementation of the SEPA system and also ensuring accountability and transparency in SEPA governance process. It meets twice a year, and is co-chaired by representatives of the European Commission and European Central Bank. The SEPA Council members include five representatives from the user side of the market (consumers, retailers, businesses, and national authorities); five representatives from the supplier side (European Payments Council, cooperative banks, savings banks, commercial banks, and payment institutions); and four national central bank board members (representing the Eurosystem).¹³⁴ The EPC now engages in extensive consultation with external stakeholder groups

¹³² *EU Direct Debit Rules Open to Fraud, Says Consumer Group*, EURACTIVE.COM (Jan. 26, 2010), <http://www.euractiv.com/payments/eu-direct-debit-rules-open-fraud-news-223371>.

¹³³ *Commission Communication, Completing SEPA: A Roadmap for 2009-2012*, COM(2009) 471 final (Sept. 10, 2009) (emphasis added).

¹³⁴ *SEPA Council*, EUR. COMM'N, http://ec.europa.eu/internal_market/payments/sepa/council_en.htm (last visited Jan. 5, 2013).

before finalizing or amending schemes.¹³⁵

At the same time that the Commission and external stakeholders were growing frustrated with the EPC's governance system, the EPC was growing frustrated with the Commission's reluctance to support the work of the EPC with the full weight of EU legislation. The original vision for SEPA was that use of legacy national EFT systems would end and that all Euro transfers, domestic or cross-border, would be based on EPC standards; but without any statutory mandate, domestic Euro transfers were not being converted to the new formats. For example, the SEPA Credit Transfer Scheme was launched in 2007 with great fanfare, but by 2011, only 22.6 percent of all Euro transfers were made using it.¹³⁶ Recognizing that progress in building SEPA had stalled, the EU Council and Parliament declared the need for a legislated "SEPA end date" to accelerate the migration process.¹³⁷ The Commission responded, however, with a proposal to open up to competition the process of setting SEPA standards, without a firm commitment to an end date.¹³⁸ Although the Commission tried to characterize the

¹³⁵ See, e.g., Javier Santamaría, *EPC Plenary Meeting Update*, EPC NEWSL. (Eur. Payments Council), July 2012, at 47, available at http://www.europeanpaymentscouncil.eu/pdf/EPC_Newsletter_300712_15.pdf (At the EPC Member Plenary Meeting in June 2012, "It was decided that prior to continuing work to finalise the new optional SDD Fixed Amount Scheme, the following bodies would be consulted: the Payment Systems End User Committee (EUC) – in particular the BEUC (Bureau Européen des Unions de Consommateurs), the European Consumer's Organisation – and the SEPA Council chaired by the European Commission (the Commission) and the European Central Bank (ECB) to ensure that the work is supported by the end users as well as the ECB and the Commission.").

¹³⁶ Etienne Goosse, *SEPA Migration: Facts and Figures*, EPC NEWSL. (Eur. Payments Council), Jan. 2012, at 27, available at http://www.europeanpaymentscouncil.eu/pdf/EPC_Newsletter_300112_13.pdf.

¹³⁷ *Council Conclusions on SEPA*, COUNCIL OF THE EUR. UNION (Dec. 2, 2009), http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/111670.pdf; Parliament Resolution 2010/C 349 E/09 of 10 March 2010 on the Implementation of the Single Euro Payments Area (SEPA), 2010 O.J. (C 349).

¹³⁸ Internal Market and Services DG, *Working Paper on SEPA Migration End-Date* EUR. COMM'N (June 2, 2010), http://ec.europa.eu/internal_market/payments/docs/sepa/end-date_migration_en.pdf. (If Commission remains "neutral" with regard to specific standards, and only mandates "essential

development of EPC standards as a “market-driven” process that should be subject to competition, EPC members understood that SEPA schemes were public goods constructed by private enterprises at their own expense in furtherance of the Commission’s goal of building the Internal Market:

SEPA was not started as a demand-driven process, but as a policy-maker-driven EU integration initiative. The political SEPA vision aims to generate macro-economic benefits, strengthen the euro currency, drive forward the integration of the internal market and accelerate technological innovation in payments and beyond. In other words, SEPA is supposed to promote the public interest of European citizens at large. The current [low] rate of SEPA market uptake therefore, is perfectly in line with the progress of any other major EU integration initiative promoting a good that is not assumed to produce immediate benefits, requires initial investment to be realised and lacks clear regulatory direction. The European Commission itself recognises that full migration to SEPA would take some thirty years if projected based on market uptake to date. Consequently, the majority of stakeholders recognise that deadlines for SEPA migration must be set through EU legislation.¹³⁹

The low voluntary adoption rates for SEPA schemes clearly demonstrated that the SEPA project was not market-driven, and without decisive intervention by a regulator, it would simply fail to achieve its original goals. In 2012, the Commission issued the SEPA End-Date Regulation, setting February 1, 2014 as the deadline for phasing out the use of old national Euro transfer

requirements” for SEPA migration, then it might be possible for a new SEPA standard setting process to be organized to compete with EPC).

¹³⁹Gerard Hartsink, *So What’s in a Name? Explaining Payment Schemes, Instruments and Systems*, EPC NEWSL (Eur. Payments Council), Oct. 2010, at 1, available at http://www.europeanpaymentscouncil.eu/pdf/EPC_Newsletter_251010_8.pdf.

schemes and full migration to the new EPC SEPA Credit Transfer and Direct Debit Schemes.¹⁴⁰

Between market pressure for reform created by the original Regulation 2560/2001 and a statutory end-date established in 2012, together with the creation of the SEPA Council, the EPC and the Commission ended up in something close to the “New Approach” co-regulatory framework. The process looked more like LME informality than CME organization, however. With regard to the possibility of combining harmonized AML/CFT compliance business processes with ICT technical interoperability standards into something like “schemes” for a global mobile remittance network, the SEPA experience suggests that some degree of coercion by a central regulator would be necessary, and that the process of building and fine-tuning the “interface” between political institutions, markets and SDOs would be complex.

A global mobile remittance network will require some kind of co-regulatory interface, and the competition has already begun among developed and developing countries with both LME and CME orientations to take a leadership role in building that interface. Developed and developing countries that already have standards strategies in place are most likely to emerge as leaders in that process, while developing countries without national standards strategies will be unable to contribute much without a great deal of technical assistance. From the perspective of legitimacy, however, regulators and consumers in less developed countries may be essential stakeholders even though they currently lack the capacity to participate actively or directly in the creation of governance institutions. The inability of billions of global mobile remittance network stakeholders in developing countries to participate in the early stages of standard setting should give rise to concern about possible “foreclosure effects.”

What would a co-regulatory framework that promotes dialogue between FATF and private ICT SDOs, and minimizes the risk of foreclosure effects for the least developed countries look like? It might include some of the following elements:

¹⁴⁰Parliament and Council Regulation 260/2012, Establishing Technical and Business Requirements for Credit Transfers and Direct Debits in Euro and Amending Regulation (EC) No 924/2009, 2012 O.J. (L 94/22).

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- Representatives of each standard-setting organization might be sent to observe each other's meetings.
- Technical assistance might be provided to representatives of less developed countries to permit them to participate as observers in private ICT SDO activities relevant to global mobile remittance standards.
- A procedure might be established to determine whether private standard-setting organizations developing global mobile remittance standards relevant to AML/CTF compliance processes meet the due process requirements set out in the Code of Good Practice in Annex 3 to the WTO Technical Barriers to Trade Agreement.
- Recognition of effective use of ICT standards to enhance compliance might be highlighted in FATF Mutual Evaluation Reports, building up a kind of precedent system.¹⁴¹
- The FATF might issue guidance establishing a presumption of compliance with regard to specific issues when compliance with certain "schemes" (incorporating both business practice and ICT standards) has been certified by an accredited independent third party.

CONCLUSION

Mobile money offers much greater promise than almost any other development strategy to emerge since the modern study of development began after World War II.¹⁴² An operational global mobile remittance network would have an impact on the payment systems in any country that is either a source of poor economic

¹⁴¹The U.S. Federal Trade Commission has created an informal system of precedent in the area of information security law through settlement agreements with companies it claims have engaged in unfair and deceptive trade practices as a result of bad security practices. JANE K. WINN & BENJAMIN WRIGHT, *THE LAW OF ELECTRONIC COMMERCE* §§ 14.03[O][1], 17.06[E] (2001 & Supp. 2012).

¹⁴²On the post-World War II origins of the modern study of development, *see generally* GERALD M. MEIER & DUDLEY SEERS, *PIONEERS IN DEVELOPMENT* (1984).

migrants or a target destination for them. No such network exists today, but, spearheaded by Visa and the GSM Association, a technical standards architecture for one is already emerging. The development of such a global architecture could promote financial inclusion without regard to national boundaries. The challenges facing EU regulators in creating a “Single Euro Payment Area” illustrate clearly the problems that might arise if developing countries each build their own mobile money systems and, only after they are complete, attempt to make them interoperable.

A global mobile remittance architecture might also provide an opportunity to integrate financial integrity functions into the operation of the network. If developing country regulatory requirements could be addressed in the same ICT standards that constitute the network, then the real cost to developing countries of AML/CFT compliance might fall with the growth of global mobile money networks. In such a case, expansion of the network would simultaneously enhance both financial inclusion and financial integrity goals. The challenges facing the card networks trying to increase security at the retail point-of-sale with the Payment Card Industry Data Security Standard illustrate clearly the risks of trying to “bolt on” compliance functions rather than “baking them in” from the beginning.

In recent decades, regulatory competition in many global ICT markets has been intense as countries try to push the development of technical standards in a direction that is compatible with their existing institutions. So it should not be surprising if regulatory competition emerges to set standards for a global mobile remittance market. The standard-setting activities that are already underway are within the “liberal market economy” tradition, and without external pressure from national regulators or international regulators with market clout, are unlikely to internalize any costs of AML/CTF compliance. They are also more likely to be dominated by private parties and to rely on proprietary technologies. By contrast, “coordinated market economy” regulators are more likely to embrace open standards. They are also more likely adopt policies like “privacy by design” that require private parties to internalize significant social regulation costs in the development of products and standards. If developed and developing CME countries supported an “integrity by design”

approach in standard setting, then AML/CTF compliance costs in developing countries pursuing mobile money financial inclusion strategies might fall.

A common reason that technical standard-setting efforts fail, however, is that the problems the standard-setting process tried to address were “over-constrained” or became too political.¹⁴³ Within the LME approach to ICT standard setting, it is often possible to keep a tight focus on meeting market demand as quickly and effectively as possible. Because financial integrity is a regulatory obligation imposed on financial service providers, it is unlikely that financial integrity functions would be incorporated into LME market-driven standards in the absence of a clear regulatory mandate. The FATF, as the focal institution for global AML/CTF regulations, does not yet appear to have focused on ICT standards as a mechanism for reducing compliance burdens, let alone to have considered issuing such a mandate. Should it choose to focus on ICT schemes that combine technical interoperability standards and harmonized business process standards as a policy mechanism, then ICT governance issues would immediately surface. At that point, careful analysis of some of the co-regulatory mechanisms already in use in the United States and European Union might help frame governance issues related to regulatory effectiveness and legitimacy for global mobile money networks.

¹⁴³The IETF addresses both problems simultaneously with its “rough consensus and running code” standard. If rough consensus is not possible, i.e., the problem is too political, it is not undertaken. If there is not more than one successful implementation of the standard, i.e., running code, then the standard is not issued. More political organizations such as ISO and the ITU do not have the luxury of simply refusing to work on projects or failing to complete them. As a result, their portfolios are replete with standards with no known adoptions.