Adam Smith, Economic Development, and the Global Spread of Cell Phones[1]

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TODAY, 75 percent of people globally have access to a cell phone. Of the six billion subscriptions worldwide, 77 percent are held by people in developing countries.[2] Despite the great disparities among high- and low-income regions globally, there is a reasonable parity in access to cell phones. Moreover, the ubiquitous proliferation of this modern technology in low-income countries has taken place quite rapidly, over the course of half a generation. Even when lacking basic needs—food, water, medicine, shelter, education—billions of people all over the world today rely on a technology that was reserved for the wealthiest sliver of the wealthiest nations a mere fifteen years ago. In contrast, for example, the governments in low-income countries have been trying to provide electricity for roughly sixty years, but 87 percent of their rural populations and 56 percent of their urban populations still lack access to it.[3]

We could analyze this rapid global proliferation in the relatively narrow terms of business and marketing or with a broader lens of technology and society, but it might be most useful to approach it at a more fundamental level—that of political economy. Indeed, to take a more limited approach would not do justice to a phenomenon that has been

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[2] "Maximizing Mobile," World Bank 2012 Information and Communications for Development, 8.

[3] United Nations Development Programme, *The Energy Access Situation in Developing Countries*, fig. 3, p. 12, shows that as of 2008, 87% of the rural population in less-developed countries is "without electricity access," and 56% of the urban population in these countries is "without electricity access."

so pervasive and rapid. In the field of economic development, the speed and impact of its spread render the mobile phone a clear outlier. But what if the cell phone phenomenon were not an exception but, rather, an illustration of fundamental principles? What if a study of this phenomenon could serve as a guide to the best political-economic path forward?

Adam Smith sat down to write *An Inquiry into the Nature and Causes of the Wealth of Nations* about 250 years ago, long before the invention of the cell phone or even the landline telephone.[4] But his work has provided the foundation for analyzing political economies ever since its publication in 1776. Smith had little to say about technology and innovation, but the relevance of his reading of human nature and how it affects social and economic processes has endured. In this article, I hope to show that Smith's observations on the general nature of human advancement and interactions go a long way toward explaining the extraordinary proliferation of cell phone technology, as well as bottom-up economic development more generally.

In particular, I hope to demonstrate that Smith articulated his insights and observations to promote broad-based economic empowerment, through which other elements of progress ensue. The cell phone phenomenon, interesting in its own right, can exemplify Smith's mechanisms of inclusive progress. But just as critically, we can move in another direction and look at cell phones to provide a re-reading of Smith, in significant part because his thoughts, though very relevant to low-income countries, are rarely used in "development economics." While the impact of cell phones has been large and pervasive, a re-understanding of Smith may carry even greater import.

I am focusing on the economic benefits of communication and why people adopt related technology. Therefore, I will leave aside any other direct political implications of mobile technology such as those revealed in the Arab Spring of 2011. I also leave unexamined, at least for now, other potential new influences of this technology in arenas such as banking and health services, which are potentially enormous but again are not the reasons why people originally adopted cell phones.

Adam Smith, "Development Economics," and "Aid"

As I endeavor to explain how cell phone usage spread in low-income countries through Smith's lens, it is hard to ignore Smith's relevance to

[4]The edition I will be citing throughout this paper is Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Great Books of the Western World, ed. Robert Maynard Hutchins (Chicago: Encyclopedia Britannica, Inc., 1952). Abbreviated as *WN* for all following citations.

these economies as a whole. Surprisingly, however, there has been little application of his thoughts in "development economics," although there are countless articles and books on his theories in general. This dearth is surprising because Smith's legacy in economics is very broad. Ronald Coase explained it succinctly when he said, "[T]he main activity of economists . . . [is] to fill the gaps in Adam Smith's system, to correct his errors and to make his analysis vastly more exact."[5]

Of great relevance to low-income countries today, Smith was in search of processes that give rise to "universal opulence which extends itself to the lowest ranks of the people."[6] His insights are of particular note in this regard since he was writing in eighteenth-century Britain, where at least some conditions were similar to those in low-income countries today. Smith connected the improvement of the lives of the poorest people to the improvement of the society as whole: "Is this improvement in the circumstances of the lower ranks of people to be regarded as an advantage or as an inconveniency to the society? . . . Servants, labourers and workmen of different kinds make up the far greater part of every great political society. But what improves the circumstances of the greater part can never be regarded as an inconveniency to the whole. No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable."[7]

This point is not an isolated one in Smith's writing; it permeated his main thesis. Throughout this article, I hope to demonstrate Smith's relevance to low-income countries in several different ways, but for now I will quote Carl Menger, who in 1891, "after careful reflection," attested to Smith's distinct alignment with the poor: "A. Smith placed himself in all cases of conflict of interest between the rich and the poor, between the strong and the weak, *without exception* on the side of the latter. I use the expression 'without exception' after careful reflection, since there is not a single instance in A. Smith's work in which he represents the interest of the rich and powerful as opposed to the poor and weak."[8]

The often asymmetrical application of Smith's ideas across the ideological spectrum thus deserves some reexamination. Smith in fact had

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[5] Ronald H. Coase, "Prize Lecture," Nobelprize.org, http://www.nobelprize.org/nobel_prizes/economics/laureates/1991/coase-lecture.html.

[6] Smith writes, "It is the great multiplication of the productions of all the different arts, in consequence of the division of labour, which occasions, in a well-governed society, that universal opulence which extends itself to the lowest ranks of the people." *WN*, book 1, chap. 1, p. 6.

[7] *WN*, book 1, chap. 8, p. 33.

[8] Carl Menger, "Die Social-Theorien der classischen National-Oekonomie und die moderne Wirthschaftspolitik" (1891) in Carl Menger, *Kleinere Schriften zur Methode und Geschichte der Volkswirtschaftslehre* (London, 1935), 223.

a very balanced view of economic life. For instance, although he is often remembered for championing *laissez-faire*, a significant part of *The Wealth of Nations* explains that the state has a constructive role in promoting economic and social progress,[9] something I also strongly believe. Smith's thinking becomes all the more relevant and important, as it can help us map a route to good governance and understand the critical role played by governments. While Smith championed self-interest, as a moral philosopher he also cared deeply about fostering cooperation among people and was always mindful about the influences that lead people to care for each other.

While he advocated commercial progress, Smith disapproved of persistent high profits[10] and was highly critical of big business, particularly the East India Company—the archetype of big business in his day. Smith also had many harsh things to say about merchants and manufacturers. In fact, his main concern with the state was actually its relationship with business people, and the latter's propensity to advance self-interests that did not align with the general interests of society. He warned that the state could be captured by the "clamour and sophistry"[11] of businessmen who seek the protection of the state through both overt and covert means in order to avoid market discipline. Because of the many possible disguised protections the state may provide to businesses, Smith advised that government, with some noteworthy exceptions, stay out of markets, and consequently became known for "promoting" *laissez-faire*. The notable criticism of powerful business interests that tempered Smith's alleged advocacy of *laissez-faire*, however, generally has been overlooked. In fact, Smith would have disapproved of the global economy we face today, where giant corporations have disproportionate market power and influence over governments.

Given Smith's concerns about the poor and his broad and balanced legacy in economics, I suspect that the dearth of his ideas in development literature is due to the inordinate amount of attention paid to his recommendation that the state rarely interfere with economic affairs. In contrast, development economists generally have "consider[ed] the kinds of policies that *an active state* and the international community

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[9] See Jerry Muller, *The Mind and the Market: Capitalism in Western Thought* (New York: Anchor Books, 2002), 77: "By providing for defense, justice, and infrastructure, government created the preconditions for a market economy and for 'that universal opulence which extends itself to the lowest ranks of the people.' "

[10] Nathan Rosenberg, "Adam Smith on Profits—Paradox Lost and Regained," *Journal of Political Economy* 82.6 1974 (1974): 1177–90.

[11] *WN*, book 1, chap. 10, part 2, p. 55.

could adopt to accelerate a country's rate of development [emphasis added]."[12]

One of the exceptions in this canon of "active state" development literature is Amartya Sen's *Development as Freedom*, an eloquent treatise on freedom as both "the ends and the means of development"[13] that refers to Smith's insights throughout its pages. However, even Sen ultimately leaves responsibility, in effect, to the active state, arguing that the key to development lies "in the making of public decisions that impel the progress of [various] opportunities" for people.[14] These opportunities include "economic opportunities, political liberties, social powers, and the enabling conditions of good health, basic education, and encouragement and cultivation of initiatives."[15] While a state would play the role Sen describes when it is accountable to its citizens and aligned with their priorities, these conditions generally arise only when citizens attain adequate economic power to restrain their leaders.[16] Foreign aid or mineral wealth conversely expands the power of authorities, while decreasing their incentive to empower citizens economically.

Consequently, "aid" to the governments of low-income countries has had less than ideal results. Since the beginning of "aid" in the 1950s, the growth of output per worker in low-income countries decreased from 3 percent in the 1960s to negative or no growth in the 1980s and 1990s.[17] "Aid" money, in expanding the receiving governments, has encouraged centralized planning and rulemaking and led to extensive bureaucratic red tape.[18] Anne Krueger, in her famous paper on rent seeking, explains how "government interventions [are] frequently all-embracing" in low-income countries.[19] As a result, the emergence of entrepreneurs and the associated rise of competition and innovation generally do not take place as fast as they would through market forces.

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[12] Gerald M. Meier and James E. Rauch, *Leading Issues in Economic Development*, 7th ed. (New York: Oxford University Press, 2000), 69.

[13] Amartya Sen, *Development as Freedom* (New York: Anchor Books, 2000), 35–53.

[14] Ibid., 5.

[15] Ibid.

[16] Woodrow Wilson, both a former head of state and an accomplished political scientist, famously said, "The history of liberty is a history of the limitation of governmental power, not the increase of it" (Woodrow Wilson, *Address to the New York Press Club*, New York City, 9 September 1912).

[17] William Easterly, *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics* (Cambridge, Mass.: MIT Press, 2001), 74.

[18] For more on how aid has expanded governments, see Karen L. Remmer, "Does Foreign Aid Promote Expansion of Government?" *American Journal of Political Science* 48.1 (Jan. 2004): 77–92.

[19] Anne O. Krueger, "The Political Economy of the Rent-Seeking Society," *American Economic Review* 64.3 (June 1974): 291.

The consequent poverty ensures continued deficiencies in infrastructure, including communications infrastructure, and justifies more "aid."[20]

Smith did not see the key to economic progress in "aiding" governments financially from outside, but in the innate effort of individuals striving to improve their conditions. He wrote that the "natural effort of every individual to better his own condition . . . is so powerful a principle, that it is alone . . . capable of carrying on the society to wealth and prosperity."[21] One explanation of economic decline or stagnation in low-income countries is that the "aided" and expanded state suppresses the "natural effort of every individual to better his conditions." In contrast, individuals searching for ways to improve their conditions, as Smith had observed, found an opening in cost-effective communication facilities that saved time and effort and presented new opportunities to them.

Cell Phones and the Possibility of Universal Opulence

Adam Smith's thinking was fundamentally inclusive. In "universal opulence which extends itself to the lowest ranks of the people," he articulated his ultimate aim: a society in which no one is left behind. Smith celebrated the "commercial society," whereby division of labor advances as individuals and families specialize in certain areas and depend on markets to meet their other needs. To Smith, "universal opulence," extensive division of labor, and a completely inclusive economy were parts of the same ultimate goal. Of course, by "commercial," Smith did not necessarily mean big businesses. Such entities often do not specialize, but instead take on a diversified set of activities and even vie for influence through governments, potentially creating impediments to the advancement of division of labor.

The process of division of labor, on one hand, gives rise to greater incomes for individuals and nations, and, on the other, embraces more and more people into an active economy. Chains of specialization and exchange create greater overall economic efficiency and release resources, which are then absorbed by new wants and demands, sustained

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[20] Adam Smith would have probably disapproved of aid to governments. He had strong words against dependency, at least at an individual level, when one individual becomes dependent on another. After extensive research on Adam Smith, Lisa Hill summarizes Smith's views on dependency, in this case meant to be person-to-person dependency: "'Dependency' is pernicious because it breeds servility and fosters asymmetrical and, therefore, unhealthy and unproductive social relations. There is nothing so likely 'to corrupt and enervate and debase the mind as dependency'; conversely 'nothing gives such noble and generous notions of probity as freedom and independency.' " Lisa Hill, "Adam Smith and the Theme of Corruption," *Review of Politics* 68.4 (Fall 2006): 654.

[21] *WN*, book 4, chap. 5, p. 232.

by corresponding increases in incomes. While one end of a chain may not be aware of the activities of the other end, all act in concert, guided by Smith's famous "invisible hand." Smith considers this to be the "civilized society," in which an individual "stands at all times in need of the co-operation and assistance of great multitudes."[22] In effect, Smith demonstrated a point later made more precise by David Ricardo—that the economic gains of the poor are beneficial for the rich "both among nations as among individuals."[23] As the poor are able to increase their purchasing power, everyone, including the rich, may more effectively specialize, and greater exchange between different income groups ensues. The process of division of labor progressively includes, engages, and uplifts more people.

Cell phone technology, as it turns out, contributes to Smith's goal of inclusion in profound and far-reaching ways. From the beginning, cell phones held the potential for ubiquitous usage. To start, they meet a universal need: they unleash widespread interpersonal communication. People need to communicate for every imaginable purpose every day and they willingly adopt technology that makes that process easier. Second, cell phones were economically feasible. The price of digital processing power—the brainpower of computers that also power cell phones—cascades downward, described by what is known as Moore's Law.[24] For instance, the price of a certain amount of processing power decreased from \$200 to \$1 in just fifteen years. This means that a device whose operation cost \$1,000 in 1992 could become available at \$5 in 2007. In reality, we may not see such drastic drops in price today, as our appetite for technology demands devices with more and more processing power, but even increasingly powerful gadgets undergo price decreases as time goes on.

Third, unlike computers, which only the literate and the trained can use efficiently, voice-communication is utilized by virtually everyone in

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[22] *WN*, book 1, chap. 2, p. 7.

[23] Adam Smith writes, "Each nation has been made to look with an invidious eye upon the prosperity of all nations with which it trades, and to consider their gain as its own loss. Commerce, which aught naturally to be, among nations as among individuals, a bond of union and friendship, has become the most fertile source of discord and animosity," *WN*, book 4, chap. 3, part 2, p. 201.

[24] Moore's Law, named after Intel co-founder Gordon E. Moore, who noticed the trend in 1965, observes that over the history of computing the number of transistors on integrated circuits at the minimum cost doubles approximately every two years. Moore predicted in 1965 that his observation was likely to hold until 1975, but it has actually held even to this day. Moore did not explicitly discuss the economic implications of this trend, but the economic effects have played out in much the same way. For his original statement, see Gordon E. Moore, "Cramming More Components onto Integrated Circuits," *Electronics Magazine*, 19 April 1965.

the world. In conjunction with their enormous and cheaply available processing power, cell phones also can incorporate features enabling "low-skilled" or untrained people to make good use of them.

The declining prices of cell phones and declining tariffs for their use meant that the market would rapidly enlarge and engulf people with low purchasing power, pushing the cell phone companies to see what Smith had seen long before: the "whole consumption of . . . those below the middling rank . . . is in every country much greater, not only in quantity, but in value, than that of the middling and of those above the middling rank."[25] Of course, the more customers served, the further service providers could lower individual costs of provision as more customers shared the costs of overhead and underlying infrastructures.

Prior to the spread of cell phones, low-income countries—and particularly their rural regions where infrastructure was especially poor—had a tremendous need for reliable forms of communication. Although some roads had been built with "aid" or other resources, communications and transportation infrastructure were generally poor in these countries. Isolated farmers relied on middlemen for pricing and transportation; middlemen, instead of providing proper price-signals and creating greater efficiency, generally exploited remote farmers. In Smith's words, merchants and middlemen engage in "conspiracy against the public"[26] whenever they get an opportunity to do so—such as, for instance, when farmers and ordinary people cannot access market information cost-effectively. Moreover, communities without effective law and order had greater need to rely on friends and families. Therefore, communication facilities could even act as a substitute—albeit a poor one—for effective law and order.

The current proliferation of cell phones in poor countries, substantially beyond the elite population, demonstrates that they certainly have been a part of the "improvement in the circumstances of the lower ranks of people" both globally and locally within low-income countries. In fact, in 2007, a study in an Indian province confirmed that "the adoption of mobile phones by fishermen and wholesalers was associated with a dramatic reduction in price dispersion, the complete elimination of waste, and a near-perfect adherence to the Law of One Price. Both consumers' and producers' welfare increased."[27] Thus, with better

[25] *WN*, book 5, chap. 2, part 2, article 4, p. 391.

[26] Adam Smith writes, "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices." *WN*, book 1, chap. 10, part 2, p. 55.

[27] Robert Jensen, "The Digital Provide: Information (Technology), Market Performance, and Welfare in the Southern India Fisheries Sector," *Quarterly Journal of Economics* 122.3 (August 2007): 879.

communication, prices converge quickly, making it difficult for middlemen to engage in "conspiracy against the public."

The Impact of Communication on the Division of Labor

Communication facilitates specialization and exchange and thus commercial society. In Smith's day, for instance, the emergence and advancement of commercial society—that is, the progression of division of labor—largely depended on the cost of transportation. The cost of transportation affected not only how readily goods moved, but also how readily people managed to communicate. For instance, because water transport was less expensive than that based on land, Smith reasoned, industries specialized and flourished (in Smith's words, "subdivide and improve") along seacoasts and riverbanks and then expanded inland.[28]

Smith considered "the propensity to truck, barter and exchange one thing for another"[29] to be a fundamental part of human nature, and he speculated that this tendency was most probably "the necessary consequence of the faculties of reason and speech,"[30] thus linking it fundamentally to the human capacity for communication. Smith assigned great importance to this propensity, asserting that the division of labor, "from which so many advantages are derived," was the "necessary, though very slow and gradual, consequence . . . of the propensity to truck, barter, and exchange."[31]

Beyond stemming from the human capacity for speech, the progression of division of labor depends on a flow of information, or communication, in multiple other ways. Reliability, persuasion, and market size, to name several examples, advance division of labor and depend upon communication. Smith explained that in order to specialize, people must be able to rely with certainty on the possibility of exchanging surpluses for other needed goods and services: "And thus the certainty of being able to exchange all that surplus part of the produce of his own labor, which is over and above his own consumption, for such parts of the produce of other men's labor as he may have occasion for, encourages every man to apply himself to a particular occupation, and to cultivate and bring to perfection whatever talent or genius he may possess for that particular species of business."[32]

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[28] *WN*, book 1, chap. 3, p. 8.
[29] *WN*, book 1, chap. 2, p. 6.
[30] Ibid.
[31] Ibid.
[32] *WN*, book 1, chap. 2, p. 7.

Communication has great capacity for increasing such certainty. Similarly, effective communication enhances the powers of persuasion of sellers and buyers, which Smith identifies as an important aspect of trade and exchange and a natural human inclination.[33]

Finally, the extent of an individual's ability to communicate determines how much he can specialize, because a greater sphere of communication translates into a larger market. Smith wrote, "[T]he division of labor . . . must always be limited by the extent of the market. . . . When the market is small, no person can have any encouragement to dedicate himself entirely to one employment, or want of power to exchange all that surplus part of the produce for his own labor, which is over and above his own consumption, or such parts of the produce of other men's labor as he has occasion for."[34]

A person's decision to apply herself to "one employment" depends on the size of the potential market, which, in turn, depends on her capacity for communication with her potential customers. In the case of low initial purchasing power in the target market, cost-effective communication channels that allow reach to a greater number of people are crucial. In other words, the cost of communication determines the extent of the market that, in turn, determines the extent of the division of labor. This implies that better and cheaper communication can accelerate the processes that advance the division of labor and thus the transition to a more commercial society, and possibly overcome other impediments to the reduction of poverty.

Innovation, the Second Means of Increased Productivity

Though Smith's writings do not dwell much on innovations (which he usually called "improvements"), he saw innovation in general as yet another means of increasing productivity. Further, Smith saw that division of labor facilitates innovation, because discrete, individual tasks are easier to mechanize. In other words, Smith considered the primary means of increasing productivity to be the division of labor, which also paved the way to possible innovations: the second means of increased productivity. Describing the effects of division of labor, Smith identified

[33] Smith writes, "If we should enquire into the principle in the human mind on which this disposition of trucking is founded, it is clearly the natural inclination every one has to persuade. The offering of a shilling, which to us appears to have so plain and simple a meaning, is in reality offering an argument to persuade one to do so and so as it is for his interest. Men always endeavor to persuade others. . . . " Adam Smith, *Lectures on Jurisprudence*, ed. R. L. Meek, D. D. Raphael, and P. G. Stein, vol. 5 of the Glasgow Edition of the Works and Correspondence of Adam Smith (Indianapolis: Liberty Fund, 1982), 30 March 1763, p. 56.

[34] *WN*, book 1, chap. 3, p. 8.

> . . . the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many. . . . [T]he invention of all those machines by which labour is so much facilitated and abridged seems to have been originally owing to the division of labour. Men are much more likely to discover easier and readier methods of attaining any object when the whole attention of their minds is directed towards that single object than when it is dissipated among a great variety of things. . . . It is naturally to be expected, therefore, that some one or other of those who are employed in each particular branch of labour should soon find out easier and readier methods of performing their own particular work, wherever the nature of it admits of such improvement.[35]

This process of innovation releases labor and resources for "other wants and fancies of mankind," as noted in the following passage: "But when by the improvement and cultivation of land the labour of one family can provide food for two, the labour of half the society becomes sufficient to provide food for the whole. The other half, therefore, or at least the greater part of them, can be employed in providing other things, or in satisfying the other wants and fancies of mankind."[36]

In Smith's mind, division of labor and innovations were intertwined and reinforcing. Communication, since it affects division of labor, impacts both of these processes. The resulting productivity releases resources to address "other wants and fancies," giving rise to further division of labor and, eventually, more complex and robust economies. Division of labor, innovations, productivity, and new desires so form a complex cycle, with communication as a fundamental component of this intricate web.

Economic Engagement of People and the Release of Resources

Communication increases productivity in simpler ways as well. Modern devices that facilitate communication at a distance, such as cell phones, far surpass the rivers of Smith's day in allowing people to expand their economic horizons and reliably exercise persuasion over a wider circle. By easing the process of communication across physical space, such tools save time and effort, dramatically increasing the volume of exchange. In doing so, these devices give rise to the increased economic engagement of citizens.

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[35] *WN*, book 1, chap. 1, pp. 4–5.
[36] *WN*, book 1, chap. 11, part 2, p. 71.

From Smith's perspective, the economic engagement of citizens and their consequent purchasing power, not money sitting in government treasuries, determined *the wealth of nations*.[37] For example, Smith highlighted economic activities in contrasting the Mongols with the Spaniards, who would judge the wealth and consequent desirability of land for settlement based on the availability of gold and silver: "The Tartars [i.e., Mongols] used frequently to ask [European travelers] if there was plenty of sheep and oxen in the kingdom of France. Their inquiry had the same object with that of the Spaniards. They wanted to know if the country was rich enough to be worth the conquering. Among the Tartars, as among all other nations of shepherds, who are generally ignorant of the use of money, cattle are the instruments of commerce and the measures of value. Wealth, therefore, according to them, consisted in cattle, as according to the Spaniards it consisted in gold and silver. Of the two, the Tartar notion, perhaps, was the nearest to the truth."[38]

In the 1760s and the 1770s, when Smith was writing *The Wealth of Nations*, he was well aware of Spain's relative economic decline over the previous two hundred years.[39] Soon after Columbus's voyage, other Spaniards ventured into the New World and succeeded in obtaining mountains of gold and silver. Being latecomers to the continent, English merchants failed to get hold of such precious metals and instead engaged in trade, settlements, and other economic activities, thereby increasing Great Britain's national wealth. Much of the precious metal obtained by the Spaniards went toward purchasing goods from other countries, while the rest went to the royal family, enabling it to wage wars and eliminating any accountability to senates or parliaments. In contrast, the British royal family, having no such flow of precious metals, became more dependent on Parliament to raise money and more integrated with mercantile activity. The Spanish state's flow of resources, independent of its citizens' economic engagement (as is the case in "aid" to governments), eventually contributed to the decline of Spain. In contrast, the greater economic engagement of the British people contributed to the rise of Britain.

In short, thriving populations of people and cattle are a better indication of wealth than the gold and silver lying in the ground or in the royal treasury. Oxen pulling plows and carts make people more

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[37] Jerry Z. Muller, *The Mind and the Market: Capitalism in Western Thought*, 52.

[38] *WN*, book 4, chap. 1, p. 182.

[39] David Landes wrote that the "nations that started it [discovery of the New World] all, Spain and Portugal, ended up losers." For more see, for example, David Landes, *The Wealth and Poverty of Nations* (New York: W. W. Norton and Company Inc., 1998), 171–73.

productive and *release labor* to be used for other activities. Cattle manure fertilizing the soil grows more food in the same land and, therefore, *releases land* for other uses, such as growing more food. In addition, cattle provide many useful products made with resources that otherwise go unused. Milk supports a dairy industry; meat is a sought-after source of protein; bones can be used to make buttons and other items; and hide provides shoes and other leather goods. All of these are produced, generally speaking, *utilizing unused resources* because cattle graze in fields that lie fallow or in places that are unable to support crops for human consumption.

How do cell phones *release resources* and *utilize unused resources* in specific ways in low-income countries?

Cell phones *release resources* by saving time and, thus, labor. Labor can carry out its tasks more effectively within a given span of time. For instance, people avoid unnecessary travel and instead put that time to more productive use. This elimination additionally releases funds that would have been used for a bus ride or other transportation, if the intended travel was for the sole purpose of passing or collecting information. Another example, as I noted earlier, is the way a convergence of price resulting from a better flow of market information can lead to higher revenues for producers and more savings for buyers, releasing funds for other uses. Additionally, as Coase has argued, the lower transaction costs that result from lower costs of communications reduce the need to form firms to carry out certain tasks.[40] In environments where governance is poor and the creation of firms arduous, the reduced need for firms contributes to greater efficiency, thereby releasing resources that would have been used for overhead and administration to meet the consuming public's new wants. It also empowers individuals, who can now work on their own rather than in firms.

A prime example of *unused resources* vis-à-vis the cell phone is the breadth of opportunities for collaboration between two individuals. Without cost-effective means of communicating and coordinating their activities, people are unable to take advantage of many such possibilities. Unused resources also include local knowledge and information. Building on Smith's emphasis on the individual acting "in his local situation" and his or her self-interest,[41] Friedrich Hayek wrote that "the knowledge of the circumstances . . . never exists in concentrated or

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[40] See R. H. Coase, "The Nature of the Firm," *Economica*, n.s., 4.16 (Nov. 1937): 386–405.

[41] Smith writes, "[W]hat is the species of domestic industry which his capital can employ, and of which the produce is likely to be of the greatest value, every individual, it is evident, can, in his local situation, judge much better than any statesman or lawgiver can do for him." *WN*, book 4, chap. 2, p. 194.

integrated form, but solely as the disbursed bits of incomplete and frequently contradictory knowledge which all separate individuals possess."[42] If ordinary people are well connected, this important resource —dispersed bits of information—is better utilized because people can act more quickly on this knowledge. Finally, another comparatively unused resource in developing countries is the minds of individuals. As an individual advances economically, she tries, in her own self-interest, to employ capital or any other resource in the most efficient ways she knows, which serves the purposes of her society overall. In other words, economic advancement leads an individual to align her interests with that of her society—as long as she faces a competitive marketplace.[43] The average citizen always faces a competitive marketplace and she therefore always aligns her interests with that of her society. A large business, on the other hand, if it makes meaningful profits, would naturally give rise to competition by attracting other producers, unless it manages to co-opt the state into protecting its interests—something against which Smith had famously warned.

Advancing in Tandem

As I pointed out earlier, Smith's measure of *the wealth of nations* is the purchasing power of average citizens. This definition is highly relevant in understanding how billions of dollars' worth of cell-phone infrastructures have been and are being built in low-income countries. While there were some initial investments by entrepreneurs and phone companies, at the end of the day it was the increased productivity of people —stemming from the individual desire to improve one's condition— that built this massive infrastructure. Increased productivity translated into the increased ability of consumers to pay, which increased both company profits and the company's ability to finance new infrastructures. If people were not being more productive through cell phones, they could not en masse keep buying the service and the infrastructure build-up would have stopped.

Who provides initial investments for what Smith called "improvements"? This is where Joseph Schumpeter comes into the picture, because Smith, focused on "the wealth of nations," as opposed to "the

[42] Friedrich Hayek, "The Use of Knowledge in Society," *American Economic Review* 35 (September 1945): 519.

[43] Smith writes, building up to his famous point on the "invisible hand," that "every individual, therefore, endeavors as much as he can, both to employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of society as great as he can." *WN*, book 4, chap. 2, p. 194.

wealth of individual businessmen," did not explicitly address entrepreneurs who introduce these "improvements" at great personal costs and risks. Schumpeter filled this gap in 1911 when he pointed out that entrepreneurs, motivated by their self-interest to make large profits,[44] add dynamism to an economy. According to Schumpeter, an economy achieves growth when entrepreneurs provide the "will and action" to combine assets in order to create new economic value—potentially using new processes and serving new markets.[45] The initial investment could come from a business as well but, whether by an entrepreneur or an existing business, the investment is made with the expectation that consumers will embrace the output. Therefore, generally speaking, the product has to address the "natural effort of every individual to better his condition."

One general measure of the success of entrepreneurs is the number of people who are able to purchase a product with their hard-earned money, which, of course, corresponds to the profits the entrepreneurs can make. People of very low income will purchase a product if that product actually improves their lives in some meaningful way. By this, I mean that using the product allows them to experience more economic value—whether by earning more, spending less, or enjoying a completely new economic good. Especially in a low-income country where, by definition, purchasing power is low, an entrepreneur is likely to succeed by increasing the customers' productivity, which directly affects their ability to pay for the service or product. One effective strategy among other possibilities is Smith's mass-centric approach (counting on the "natural effort of every individual to better his condition" and the large untapped market "below the middling rank"). At the same time, governments, which may or may not follow Smith's advice, will succeed in aligning public and business interests if they follow his advice not to protect businesses from competition. Even those entrepreneurs who do not follow this mass-centric approach (and again those that are not protected from competition by governments) will enrich the overall commercial landscape, which allows another product with mass appeal to take root.

The key point I want to make here is that Smith's mass-centric thinking, along with his advice for governments, shows us a way of

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[44] William Baumol describes the motivation behind an entrepreneurial opportunity as "that is where the money is," not unlike what the bank robber Willie Sutton said in explaining why he had targeted banks. William Baumol, *The Microtheory of Innovative Entrepreneurship* (Princeton, N.J.: Princeton University Press, 2010), 152.

[45] Joseph Schumpeter, *The Theory of Economic Development* (originally published in German in 1911) (Piscataway, N.J.: Transaction Publishers, 1983), 132.

broad-based progress, allowing entrepreneurs and businesses, on one hand, and the masses, on the other, to advance economically in tandem. That is what has happened in the case of cell phones, to a greater or lesser extent in each country based on factors like competition. In countries like Bangladesh, where there is competition among six mobile operators as Smith would have advised, progress has taken place on a greater scale than in countries like Mexico, where there is a quasi-monopoly by one dominant operator.

Why the State Ceded Cell Phones to the Private Sector

I have posited earlier in this paper that low-income countries are generally characterized by powerful states with overwhelming control over various economic sectors. I have also explained the economic stagnation of such countries and the poverty of their citizens through paralyzing governmental control of their economies, which prevents innovations and entrepreneurial efforts. Why then did the governments in these countries allow the emergence of the cell-phone sector in private hands?

The explanation may lie in the "unintended consequences" that, according to Smith, generally populate any political economy.[46] In fact, his famous "invisible hand" is only his most prominent example of "unintended consequences" whereby the general interests are met unintentionally when individuals pursue their self-interests in a competitive environment.

That the cell phone industry generally landed in the private sector is an interesting unintended consequence of the rapid price decline of digital technologies as captured by Moore's Law. In the mid-1990s, when only about 4 percent of the U.S. population used cell phones, they were seen as luxury items and probably applicable only for businesspeople.[47] Governments and ambitious bureaucrats considered cell phone technology to be useful only to a select few, and they did not pursue a project that they expected to be of limited scope. Instead they focused on fixed phone networks, which are invariably owned and operated by governments in low-income countries, as the prime means of communication. Incumbents in any industry tend to underestimate the contribution offered by innovations, perhaps because their own vested interests anchor and limit their outlook. In the case of cell phones—and

[46] For a discussion of Smith's views on unintended consequences, see Jerry Z. Muller, *Adam Smith in His Time and Ours* (Princeton, N.J.: Princeton University Press, 1993), 84–92.

[47] History of Wireless Communications, CTIA, (http://www.ctia.org/advocacy/research/index.cfm/AID/10388), accessed 13 July 2012.

their precipitous drop from luxury to mass product in a few years—many governments let the industry slip out of their hands.

It is interesting to note that Ethiopia, a country embroiled first in civil war and later in another war with Eritrea, did not manage to adopt cell phones until 1999, when they were introduced as a state-controlled sector. By that time, the initial successes of cell phones in other parts of the world were somewhat visible. This knowledge probably contributed to the Ethiopian government's decision to keep the sector within state control, although the increased power of a state at war may also have played a role. Afghanistan also adopted cell phones at a late stage—in 2002. However, under American influence, it issued licenses to private companies.

In 2010, Ethiopia and Afghanistan were comparable countries in terms of income, with \$390 and \$410 in GNI per capita, respectively.[48] Ethiopia had a much bigger market to allow for greater economies of scale and could potentially accommodate several competitors; it was less ravaged by war and had an easier terrain. Yet Ethiopia had one of the lowest cell phone penetration rates in the world (12 percent), while Afghanistan had achieved a penetration rate of 39 percent.[49] The ability to flourish in the private sector, rather than languish in government hands, evidently made all the difference. In contrast with the rapid spread of cell phones, there are great shortages of electricity in low-income countries, where power production is owned nearly exclusively by the states. While governments have the responsibility to provide certain public goods, they do not face pressure to expand markets. Governments may also be unsuited for the provision of a service that involves constant innovations.

Thus, cell phones have experienced limited interventions by the state due to a lack of understanding of their potential that gave opportunities to entrepreneurs. Rural populations may have enjoyed this unintended benefit to an even greater degree, a silver lining to the government negligence they experience. Most government bureaucrats live in urban areas, and the government's provision of electricity, fixed phones, water, and other services reaches only a segment of the urban population. Largely through negligence, the rural population is subject to less state intervention. That is, the lack of attention from governments means rural populations are freer to embrace Smith's competitive commerce. The rural areas of low-income countries are thus interesting avenues for possible transformation of those countries in their totality.

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[48] "Maximizing Mobile," World Bank 2012 Information and Communications for Development, 162 and 217.

[49] Ibid.

A Rough Calculation of Economic Impact

Let us also examine the scale of the economic transformation arising from the global spread of cell phones, by looking at the current poverty belt of the world: South Asia and sub-Saharan Africa, together home to nearly 2.5 billion people. In the world's largest zone of poverty, where the per capita income is less than one-tenth of that in the U.S.,[50] phone penetration has climbed from zero to 63 percent in the last fifteen years.[51] A study of 120 countries by Christine Zhen-Wei Qiang at the World Bank has shown that a 10 percent increase in mobile phone penetration results in a 0.8 percent increase in economic growth.[52] Based on Qiang's study, I calculate that this increase in penetration contributed on average an additional 1 percent economic growth for each of these fifteen years. I consider this calculation conservative because higher-income pockets within the regions are likely to have higher cell phone penetration, which has a greater effect on the growth of higher incomes. Further, though the calculation of 1 percent annually over fifteen years possibly overestimates the effect of cell phones in the early years, this overestimation is more than compensated for by the underestimation of the effect in the later years—when the economy is larger, the penetration higher, and the network effect greater.

According to World Bank data, the combined GDP of South Asia and sub-Saharan Africa in 1996 was $811 billion, which grew to $1,870 billion by 2011 (measured in constant 2000 U.S. dollars).[53] Had South Asia and sub-Saharan Africa grown 1 percentage point less each year, then the region's actual realized growth would have been only $1,509 billion by 2011. Therefore, one could argue that the compounded effect of gains due to cell phones during the previous fifteen years has resulted in an increase in GDP of $250 billion (measured in constant 2000 U.S. dollars).

A fraction of this increased income goes to the cell phone companies that provide the service, supporting their infrastructure build-up, maintenance, and profits. The cell phone companies and people are advancing economically, in tandem. The enormous economic value

[50] The per capita income in Africa is much lower when the income from mineral wealth, enjoyed by a minuscule percentage of the population, is not taken into account. Therefore the figure presented for Africa and the Indian Subcontinent is significantly lower than that of the U.S. when such income is excluded.

[51] World Development Indicators database, *The World Bank*, http://databank.worldbank.org/ddp/home.do, 9 July 2012.

[52] Christine Zhen-Wei Qiang, "Mobile Telephony: A Transformational Tool for Growth and Development," *Private Sector & Development* 4 (November 2009): 7.

[53] World Development Indicators database, *The World Bank*, http://databank.worldbank.org/ddp/home.do, 9 July 2012.

created is simply the consequence of a technology leveraging the natural effort of a population of 2.5 billion, where the economic value is correspondingly distributed among 2.5 billion people.

The impact of this economic growth is quite meaningful in low-income countries even beyond the realm of economics, which I will discuss in the next section. However, we also cannot ignore the economic impact—as Smith would have expected—on high-income countries. For high-income countries, the cell phone industry represents huge exports of cell phone equipment and expertise, not to mention the myriad other exports made possible by the increased purchasing power in low-income countries.

Cultural Norms and National Governance

The far-reaching effects of cell phones are not confined to the economic sphere. If we agree that pervasive and cost-effective communication contributes to the emergence of a "commercial society," we also should explore Smith's observations about the effects of commerce on social relations. To begin, anyone trying to sell something to a customer or a client must be disciplined, punctual, reliable, and able to empathize with customers. Following their own self-interest, people begin to appreciate and develop the habits of "economy, industry, discretion, attention and application of thoughts" through commercial activities.[54] It is with these ideas in mind that Smith felt that commerce "make[s] men better, not just better off."[55] One may worry that businesspeople will mistreat customers in low-income countries. Customers in these countries are economically weak, and merchants may not expect repeat business or may not face a sufficiently competitive environment. However, commercial progress and the emergence of competition empowers customers and weakens businesspeople, which, in turn, gives rise to better behavior by businesspeople and ensures a more informed customer-base.

In Smith's own words,

> Whenever commerce is introduced into any country, probity and punctuality always accompany it. . . . This is not at all to be imputed to national character, as some pretend. It is far more reduceable to self interest, that general principle which regulates the actions of every man, and which leads men to act in a certain manner from views of advantage, and is as deeply implanted in an Englishman as a Dutchman. . . . Where people seldom deal with one another, we find that they are somewhat disposed to cheat, because they can gain more by a smart

[54] Adam Smith, *The Theory of Moral Sentiments*, ed. D. D. Raphael and Al. Macfie (Indianapolis: Liberty Fund, 1982), part 7, section 2, chap. 3, p. 304.

[55] Muller, *The Mind and the Market: Capitalism in Western Thought*, 52.

> trick than they can lose by the injury which it does their character. . . . Wherever dealings are frequent, a man does not expect to gain so much by any one contract as by probity and punctuality in the whole, and a prudent dealer, who is sensible of his real interest would rather chuse to lose what he has a right to than give any ground for suspicion. . . . When the greater part of people are merchants they always bring probity and punctuality into fashion, and these therefore are the principal virtues of a commercial nation.[56]

In addition, Smith observed that the long-term effects of commerce go beyond better self-governance of individuals and can actually foster better governance of a society as a whole. As noted earlier, according to Smith, the "natural effort of every individual to better his own condition" is ingrained in us. However, this effort faces "a hundred impertinent obstructions, with which the folly of human laws too often encumbers its operations."[57] Authorities and other people with power can impose "obstructions," which are only gradually removed as people increase their incomes. Their increased incomes entice authorities to align themselves with citizens, creating win-win economic arrangements. For example, in Britain from the thirteenth century to the seventeenth century, members of Parliament, knowing that the monarch required their approval to levy taxes, succeeded in extracting various liberties in exchange for higher taxes, and the king's power consequently declined.[58] Similarly, as productivity-enhancing mechanisms and innovations like cell phones allow ordinary people in low-income countries to gain economic clout today, these individuals will increasingly be able to hold their governments accountable tomorrow. As Smith opined, "Commerce and manufactures gradually introduced order and good government. . . . This, though it has been least observed, is by far the most important of their effects."[59]

Many would say that low-income countries are plagued by poor governance and apparent cultural impediments to their economic and social progress. But this situation cannot be taken as a *fait accompli*. Based on the failures of commerce in low-income countries, people argue for alternate solutions to development challenges, assuming that if a productive, commercial society is to take form, the first step is to reorganize governments and alter their mindsets. However, I believe the opposite must take place. Smith explains how commerce helped Britain and Europe to make progress in terms of cultural norms and governance.

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[56] Adam Smith, *Lectures on Jurisprudence*, ed. R. L. Meek, D. D. Raphael, and P. G. Stein (Indianapolis: Liberty Classics, 1978), 458–59.

[57] *WN*, book 4, chap. 5, p. 232.

[58] Richard Pipes, *Property and Freedom* (New York: Vintage Books, 2000), 128–34.

[59] *WN*, book 3, chap. 4, pp. 175–76.

This progress was an effect of commerce, not a precondition for it. The desire to better one's own condition is universal and has persisted through the ages, as we have seen, and commerce has taken root wherever it found the slightest opportunity. For instance, it was established in Europe despite opposition from the state and the church. The solution is not an alternative to commerce, but the removal of obstacles that stifle its growth. If allowed to grow, commerce is likely to embrace all people in a society through its ever-extending fabric of specialization and exchange, on one hand. On the other hand, it will lead to a more productive cultural outlook and more prudent governance.

Smith's legacy thus plays out meaningfully in realms beyond commercial outcomes, effecting both social and political progress. Smith actually had a separate aspiration regarding political progress; he aimed to develop a "science of a statesman or legislator"[60] so that legislators and other public leaders could use work such as his own to better analyze public problems and move their societies forward. George Stigler, an admirer of Smith, found this goal at odds with Smith's overarching model, which Stigler described as "the stupendous palace erected upon the granite of self-interest."[61] Specifically, in his "science of a statesman or legislator," Smith saw the need for moral virtue in the top-down roles of legislators and explained that they must "be always directed, not by the clamorous importunity of partial interests, but by the extensive view of the general good."[62] But, Stigler asked, why did not "the high priest of self-interest"[63] expect the legislators to follow their own self-interest?[64] Stigler further objected to this reliance on legislators because, among other things, "erroneous and undesirable public policies [can]

[60] Smith writes, "Political economy, considered as a branch of the science of a statesman or legislator, poses two distinct objects; first, to provide a plentiful revenue or subsistence for the people, or, more properly, to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services. It proposes to enrich both the people and the sovereign." *WN*, book 4, introduction, p. 182.

[61] George Stigler, "Smith's Travels on the Ship of State," *History of Political Economy*, Fall 1971, 265–77. On p. 265, Stigler asks, "If self-interest dominates the majority of men in all commercial undertakings, why not also in all their political undertakings?" On p. 274, Stigler writes, "It may appear that Smith's failure to apply the organon of self-interest to political behavior requires no explanation. Political science had been a normative literature for 2300 years before Smith wrote and has remained normative to the present day."

[62] *WN*, book 4, chap. 2, p. 201.

[63] Stigler, "Smith's Travels on the Ship of State," 277.

[64] To be sure, Smith was fully aware that not all our behavior can be explained by self-interest. His *Theory of Moral Sentiment* starts with the following statement: "How selfish soever man may be supposed, there are evidently some principles in his nature which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it." *Theory of Moral Sentiments*, part 1, section 1, chap. 1, p. 1.

arise out of failures of comprehension" on behalf of the policymakers.[65] Indeed, Smith seems contradictory in his reliance on moral virtue in the state, while elsewhere describing it as "the creature of organized, articulate, self-serving groups."[66]

Despite his science of a statesman, remember that Smith himself credited "commerce and manufactures" with introducing "order and good government." Commercial progress, as Smith would have expected based on his observations, has indeed been the cause of good governance in many contexts long after Smith's death.

The Role of Universal Opulence in Better Policies

Though Smith's science of a statesman relied on political leaders to bring about progress, it has in fact been the masses, empowered through commerce, who have advanced societies. The foundation of Smith's "stupendous palace"—the "universal opulence which extends itself to the lowest ranks of the people"—is solid. The Industrial Revolution in England provides one example to illustrate the powerful influence of the masses.

Though Smith was writing at the dawn of the Industrial Revolution and it would take place after his death, he had already witnessed a consumer revolution in Britain that happened *before* the Industrial Revolution.[67] Smith saw individuals striving to improve their conditions by increasing their incomes in order to expand their consumption; consumption, according to Smith, "is the sole end and purpose of all production."[68] When people of middle and lower economic means increase their incomes, often by their own initiatives, entrepreneurs rush to capitalize on the growing purchasing power in the economy. The total consumption of the middle and lower economic strata is higher than that of the upper stratum because of the much larger number of people in the former segments of any society, and this increase in purchasing power creates a large market. When the market is large it compensates for risks inherent in innovation and provides the impetus to make capital investment for industrial production. Thus, consumption by people in the middle and lower strata gives rise to the possibilities of mass production, industrialization, and innovation.

[65] George Stigler, "The Economist and the State," *American Economic Review* 55.1 (March 1965): 4.

[66] Stigler, "Smith's Travels on the Ship of State," 265–77.

[67] See Neil McKendrick et al., *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England* (Bloomington: Indiana University Press, 1982).

[68] Smith writes, "Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer." *WN*, book 1, chap. 8, p. 287.

The Corn Laws of 1815 provide one possible illustration of progress that eventually came from the commercial empowerment of the masses, rather than the foresight of legislators. The Corn Laws put tariffs on imported grains to support the "partial interests" of large landowners, despite Smith's well-known appeal for free trade.[69] These laws went against Smith's theories in at least two ways: They catered to particular interests and they raised grain prices for the general masses, including the people on the lowest rung of the economic ladder. The Corn Laws, in other words, reduced the purchasing power of consumers, the measure of *wealth of nations* for Smith.

Lawmakers and large landowners generally were aware of Smith, and Smith's writings must have informed the analysis of these laws. But when all was said and done, powerful vested interests won the day. However, the Corn Laws were repealed thirty-one years later, in 1846, due to a shift of economic power. By 1846, the power of the aristocracy had weakened sufficiently, in comparison with that of commercial interests, and the British legislators, in their own self-interest, now catered to industrial interests. These industrial interests were tied in interlocking relationships to the masses through wages and consumption. Thus responding to economic pressures from ordinary citizens, legislators were now in favor of repealing the Corn Laws. Though lawmakers had not listened to Smith, his vision had nonetheless played out.

Britain did make great economic progress between the time of the publication of *The Wealth of Nations* in 1776 and the repeal of the Corn Laws in 1846—a period that included the Industrial Revolution. However, this progress, along with the commercial forces unleashed in the earlier periods that gave rise to the Industrial Revolution, was generally due to initiatives from below—either by the masses or by Britain's merchant class, both acting in their own self-interest. The legislators adjusted their positions due to a shift in actual economic power in the society—not because of insights or sound analysis. The voice of the British citizenry, not very audible in Smith's day, subsequently gained more decibels in the British legislature, largely as a consequence of commercial expansion. I am not oblivious to the many problems, environmental and social, that resulted from industrial growth in Britain. However, the economic empowerment of citizens in most of Britain through industrialization is unquestionable, and this empowerment has been the critical ingredient in the solutions that followed.

This point is particularly relevant for low-income countries, where

[69] Within a few years of its publication, Smith's *Wealth of Nations* "was being taught in universities as distant as Koningsberg in eastern Prussia, and in the New World. Thomas Jefferson regarded it as the best book available on political economy." Jerry Z. Muller, *Adam Smith in His Time and Ours*, 15.

governments are generally unrestrained by economically weak citizens, who are unable to bring their governments into alignment with their own broad interests. Thoughtful analysis of how these countries can move forward is either scarce or set aside. Bolstered by mineral wealth or external "aid," these governments own large economic assets and impose various economic policies and rules, stifling entrepreneurial efforts and innovations. The overextended role of governments in these countries is a function of financial resources—not necessarily analysis of general interests. Necessities have been found and justified by the existence of the resources.[70] In other words, governments' financial means have determined the extent of their operations and control. Further, vested interests, much like the large landowners with so much influence over nineteenth-century British legislators, dominate.

The actual economic transformation of the lives of the masses—something cell phones have precipitated—is a far more effective agent of progress than debates among intellectuals and political leaders. As billions of people embrace this opportunity, we see the manifestation of the "individual effort" that Smith observed and move one step closer to Smith's "universal opulence." With wider suffrage and the rising economic clout of the masses, improving the general welfare may trump the priorities of narrow interests and claim the attention of corporations, legislators, and administrators. Further, the rise of commerce diversifies an economy—Smith's overall thesis—and hence lessens the influence of any particular industry or interest.

Even in the most economically advanced countries where governments are accountable, however, the "clamour and sophistry" of business have not gone away despite broad-based economic empowerment and considerable public input in the legislature. For instance, in the United States, where we think regulations are meant to protect the public from a particular industry, Stigler finds that "as a rule, regulations are acquired by the industry and [are] designed and operated primarily for its benefit."[71] However, broad-based economic empowerment does sustain an innovation ecology that propels society forward economically and allows its citizens sufficient political space to question their leaders and bureaucrats. Similar economic engagement of people in low-income countries is feasible and would help them solve their own problems and allow them to make constructive contributions to the whole world.

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[70] Alexander Hamilton wrote in *Federalist Paper* 30, "I believe it may be regarded as a position warranted by the history of mankind, that, *in the usual progress of things, the necessities of a nation, in every stage of its existence, will be found at least equal to its resources* [emphasis in the original]."

[71] George Stigler, "The Theory of Economic Regulations," *Bell Journal of Economics and Management Science* 2.1 (Spring 1971): 3.

There is certainly reason to hope for such a shift. A gain of $250 billion in South Asia and sub-Saharan Africa due to cell phones necessarily implies that governments have a lesser hold on the economies of these regions as incomes grow in the private sector. Economic growth rates are increasing; transparency has improved. A simple technology has had the macro effect of bringing about the commercial society that Smith advocated.

Conclusion

The widespread wealth created by the rapid and near-universal adoption of cell phones through bottom-up, commercial mechanisms illuminates previously unimaginable possibilities for low-income countries. This phenomenon, while pointing the way forward, can nonetheless be illuminated by the ideas that Adam Smith began to put down 250 years ago—which should no doubt urge some serious reexamination of the current neglect of Smith's ideas in development approaches. Adam Smith and the expansion of cell phone use in the developing world together point to a powerful way to make significant progress in the world by introducing productivity-enhancing mechanisms that spur *individuals* to advance themselves economically. The people and their motivation for progress are already there; the massive economic value that ensues is user-generated, with each individual improving her situation in her own way. A greater division of labor, which leads to higher incomes, also gives rise to a higher level of skills in citizens and contributes to their ability to hold corporations and governments more accountable.

Obviously, cell phones are not a panacea for all the problems faced by low-income countries. In fact, the very success of cell phones has given rise to extraordinarily large companies in low-income countries, with adverse implications. This phenomenon illustrates the need for continual new innovations that harness individual initiative and give rise to greater commercial progress and a strong citizenry. Other productivity-enhancing mechanisms (for example, power generators, diagnostic tools, and high-yield seeds) may be more or less compelling than cell phones, but the patterns of their contributions are similar. The cell phone phenomenon also shows that the global economy and its associated research and development are the true aid to low-income countries, as Smith would have envisioned. Working in this global economy, entrepreneurs can adapt and introduce many productivity-enhancing mechanisms that advance individuals economically. The benefits of innovation scale up spontaneously and virally when individuals find such innovations empowering, and the effect becomes widespread because the key ingredient—the desire to better one's conditions—is pervasive.