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## Highlights

- For Africa to fulfill its promise of growing economic prosperity, countries must build innovation ecosystems that support the aspirations of startups and established companies to develop innovative products and bring them to market.
  - IBM is committed to helping African governments, businesses, entrepreneurs and universities develop the skills, capabilities and networks that will help them foster innovation and economic expansion.
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# Building Africa's innovation ecosystems

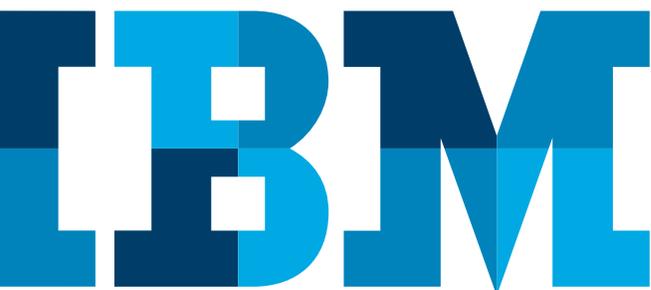
*IBM is committed to fostering innovation across the continent*

When Julian Kyula and Josphat Kunyua launched Mobile Decisioning Africa Ltd. in Nairobi, Kenya, in 2010, they had a big idea, lots of energy and solid business experience. But nobody could have predicted that just three years later their company, called MoDe for short, would be offering instant microcredit for more than 100 million prepaid mobile phone users across the African continent.

MoDe popped onto the radar of the global tech community when the company won the IBM Global Entrepreneur of the Year award. Each year, IBM stages numerous SmartCamp contests in cities around the globe where startup entrepreneurs hone their business plans, get advice from mentors and compete for prizes. MoDe won regional contests in South Africa and Brazil before winning the finals in New York City.

The SmartCamp victory is already paying off. Immediately afterwards, the two founders traveled to California's Silicon Valley, where IBM executives introduced them to venture capitalists, telecom leaders and other business associates. In short order, the two were in talks with investors who are interested in funding their global expansion. "We now have the winning credentials," says Kunyua, the company's commercial director. "Our SmartCamp victory shows that you can have competitive technology coming out of emerging markets."

Unfortunately, MoDe is an exception in Africa. Few startups in Africa have become successful outside their home countries, much less established a global foothold. And that's a problem. Without large markets to capitalize on, there are limits on how big companies can grow and how many jobs they can create.



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Today, many observers believe that Africa is on the verge of an economic boom that will help it join the ranks of the most successful emerging economies—providing opportunities for advancement and better living standards for tens of millions of people. But success can't be taken for granted. Those observers see the establishment of innovation ecosystems as a key element in producing a new wave of innovative products, igniting sustainable economic growth and helping African countries shift away from an overdependence on natural resource extraction and a reliance on subsistence farming to feed their citizens.

Innovation ecosystems are economic engines for creating new ideas and new companies. Part social network and part business infrastructure, they provide the web of support that makes it easier for startups to launch and grow quickly, and for established companies to innovate more aggressively. Hopefully, with that kind of support, a new generation of African startups will build whole new industries and create hundreds of thousands of new jobs. IBM is committed to helping African governments, businesses, universities and entrepreneurs build successful innovation ecosystems.

IBM has been doing business in Africa since its equipment was used in South Africa in 1921. In recent years, the company has expanded rapidly on the continent and today has offices in more than 20 African countries, including South Africa, Ghana, Nigeria, Kenya, Tanzania, Mauritius, Angola, Senegal, Morocco, Egypt, Tunisia and Algeria. It has helped deliver everything from online banking services for the unbanked, to affordable and dependable mobile phone services, to technologies that make cities work better. In 2012, IBM established its first research laboratory in Africa—one of just 12 such labs worldwide.

IBM's leaders understand that expanding in Africa comes with a unique set of challenges. It can't be viewed in the same way as the company's expansion in India and China, where the economies were already booming. IBM has a role to play in helping build the capacity of Africa's people and institutions—including knowledge, technology infrastructure, business sophistication, governance, and, in particular, innovation ecosystems. Also, IBM is acutely aware that Africa isn't a single market, but 54 countries. Each country has its own political, economic and cultural dynamics—and its own plan for development.

In a sense, this underscores [IBM's commitment to Africa](#). Over the coming years, IBM's leaders plan to work with businesses, governments, universities, non-profits and entrepreneurs to help create a culture of innovation. If you would like to participate in this quest, or have ideas about how corporations like IBM can have a positive impact on innovation ecosystems in Africa, please connect at [www.facebook.com/IBMMEA](http://www.facebook.com/IBMMEA) and on [Twitter @IBMMEA](#).

## Creating a recipe for innovation

Ever since Silicon Valley emerged as an innovation powerhouse in the 1970s, communities and countries have sought to replicate the valley's magic—with varying degrees of success. India's Bangalore, Israel's coastal plain, Korea's Daejeon, Beijing's Zhong Guan Cun district and other places around the world have emerged as vibrant centers of innovation and startup activity. In each case, a handful of factors were necessary ingredients for building a healthy innovation ecosystem. Those ingredients include a community of entrepreneurs, government support, good universities, availability of capital and a culture that is conducive to innovation and entrepreneurship. Not every place possesses each critical element in full measure, like the original Silicon Valley does. As a result, there's no cookie-cutter model for success. Each city or country has to devise its own recipe and create its own magic. "We have to do new thinking in Africa. We have to learn from the others, but we can't just cut and paste," says Eric Kacou, managing director of ESPartners, a business and economic development consulting firm that focuses on Africa.

In Africa, building innovation ecosystems has become an imperative for governments and business communities. And, in a few places, such ecosystems are beginning to take shape.

Nairobi, Kenya, has gained a reputation as the startup capital of Africa. A half dozen small innovation hubs and incubators have been launched in the past three years, and the city seems to be crawling with entrepreneurs. The first and foremost of the tech hubs, iHub, provides a model for other organizations around Africa that want to plant the seeds for innovation and entrepreneurship.

You can think of iHub as an attempt at creating an innovation ecosystem in a box. The facility, occupying four floors in a building in downtown Nairobi, is run by the local startup community rather than the government or a corporation, though it has backing from nonprofits and tech companies. iHub's programs include startup meetings and contests, interactions with venture capitalists, a business incubation space, a supercomputer provided by Google and Intel, and a coffee bar where people meet informally. The iHub organizers look for gaps in the local business ecosystem and try to fill them. An example is iHub Research, which facilitates scientific research collaborations.

An essential element of iHub's initial success is that it's "open and community focused," says one of the co-founders, Erik Hersman. Because of that, he says, the organization responds to the needs of entrepreneurs rather than seeking to satisfy external agendas.

Already, several promising young companies have emerged from the iHub milieu. They include Kopo Kopo, a mobile purchasing management service for small and medium-size businesses, and M-Farm, a mobile service that connects farmers with buyers of their crops and produce.

Key to the burst of entrepreneurship activity in Kenya is the success of M-PESA, the amazingly popular mobile money service offered there by mobile telecommunications carrier Safaricom. The M-PESA service was originally launched in Kenya but has now spread to other African countries. Everywhere it goes, it serves as a technology platform that tech startups build added services on top of and that other mobile carriers imitate. As a result, mobile money is becoming the driving force behind a lot of technological innovation and startup activity in Africa. It provides a means for African tech companies to leapfrog their counterparts in more developed economies and offer African businesses and consumers vital services in brand new ways.

Inspired by the success of M-PESA and iHub, a handful of universities in Kenya have begun developing programs aimed at preparing students for careers as entrepreneurs and at incubating startup companies. The leader among them is Strathmore University, a top private university with respected programs in business and information technology.

In 2011, Strathmore established @iLabAfrica, which is dedicated to fostering research, innovation and entrepreneurship with the goal of helping Kenya to achieve the United Nations Millennium Development Goals. The organization conducts collaborative research, identifies technologies that can address social problems and helps students launch companies. Right now, seven companies are being incubated there. Among them is Buymore, which provides consumer loyalty programs for university students. "We have students with very bright ideas. If they are supported they can move to the next stage and go commercial," says Joseph Sevilla, a Strathmore professor who is director of @iLabAfrica.

The government of Kenya has also played an important role in supporting the country's innovation ecosystem over the past few years. The government has improved broadband connectivity by bringing undersea fiber-optic cables into the country, which was one of the preconditions that gave rise to a massive IT industry in India. Next it launched Kenya's Open Data Initiative, where government data is made readily available via a web portal to government agencies, businesses and citizens alike. It's the first initiative of its type in Africa, and observers believe this kind of transparency will strengthen democracy as well as boost economic activity. In early 2013, the country launched the National ICT Master Plan, a strategy aimed at helping Kenya become a knowledge economy in the next five years.

A key player in these initiatives is Bitange Ndemo, the permanent secretary in the Ministry of Information and Communications, who left academia to take the ministry job in 2005. His dream now is to develop a mini-Silicon Valley a short distance from Nairobi, called Konza Techno City, which will focus on software development, data centers and business process outsourcing. "We need this ecosystem so we can begin to build the future entrepreneurs. We can create the opportunity for a Bill Gates to emerge in Kenya," Ndemo says.

Thanks to these initiatives by government, academia and the startup community, Kenya is emerging as a model for other African nations. They look to Kenya for ideas and success stories that will bolster their own efforts. Already, more than 30 tech hubs and incubators have popped up across the continent, including Hive Colab in Uganda and ActivSpaces in Cameroon. Something is happening here. Sparks are flying that could ignite economic dynamism not just in Kenya, but across all of Africa.

## Overcoming huge challenges

As encouraging as Africa's budding startup clusters are, business and government leaders are quick to point out that this is just the start. A host of daunting challenges must be overcome before healthy, large-scale innovation ecosystems will be able to flourish. There are three critical shortages: skills, venture capital and a culture that encourages entrepreneurship. In each case, promising experiments are being tried that, over the longer term, could turn the tide. They provide models that others can copy or learn from.

### Skills

While there are many colleges and universities in sub-Saharan Africa, too often they are overcrowded, the academic programs aren't up to date and fundamental scientific research suffers from a shortage of funding. Perhaps most critically for the purposes of innovation ecosystems, the focus of most of these institutions is on preparing students to take jobs in already-existing companies, rather than giving them the skills and experiences that would enable them to start their own businesses.

For Joel Macharia, the founder of PesaTalk, a financial news and data website in Kenya, inexperience contributed to business problems and a break with his financial backers that caused him to quit in early 2013. He had learned to be a CEO by reading books. Other startup entrepreneurs he sees around him know even less about business fundamentals. Typically, he says, a handful of guys who know how to code mobile apps will get together and decide to start a company. When it comes to managing and building a business, they have little relevant education and experience. "These people need practical training in what a company is and how business works," he says.

Education and business leaders recognize this knowledge gap, and they're doing something about it. In some cases, they try to fill the gap on the fly—while they're busy doing something else. Eghosa Omoigui, managing general partner of venture capital firm Echo VC Partners, with offices in Silicon Valley and Nigeria, helps the leaders of African companies his firm invests in by pairing them up with mentors at US-based companies. Once a week, pairs of CEOs get on Skype together and talk over business problems. The firm has also run basic training sessions for startup entrepreneurs in Lagos, Nigeria.

This kind of make-do activity is necessary but not sufficient. Africa needs institutions that are designed from the ground up to prepare young people to be leaders and entrepreneurs. It has a compelling model in the African Leadership Academy, a five-year-old school based in Johannesburg, South Africa. The organization identifies young people between the ages of 15 and 19 who demonstrate leadership potential, a passion for Africa, an entrepreneurial spirit and a track record of community service. They are invited to enter a two-year pre-university program comprised of courses in leadership, entrepreneurship and Africa studies. They launch businesses even while they study. "If you give them practice at that age, they will have the confidence and experience to do much bigger things later," says Fred Swaniker, the Ghanaian serial entrepreneur who founded the Academy. Most of the graduates attend top universities in the United States and Europe. The Academy forgives the debts of those to return to Africa by age 25 and stay for at least 10 years. The idea is that they will remain part of the Academy network for the rest of their careers.

Because of the Academy's financial approach, where most students get room and board for free, it can't scale to a mass level. But some elements of the program could be adopted by other schools—including the curriculum, the practical experiences in entrepreneurship, and the social networking angle. The government of Nigeria, for one, is developing training programs with universities and industrial partners that provide technology and entrepreneurship skills. "Our graduates need to be job creators, not job takers," says Ngozi Okonjo-Iweala, Nigeria's minister of finance.

## Capital

In sub-Saharan Africa today, a lot of people talk about venture capital, but not many do much about it. The levels of private equity investment have been trending up, from 3 percent of all emerging market funding in 2007 to 6 percent in 2010, according to Ernst & Young. But most of the investments are in mature companies; only a tiny fraction of them are seed or first-round investments. The problem is that there are only a handful of true venture funds based in Africa and most US and European VCs don't have the local knowledge and connections, or the right business models, to make a real go of it in Africa. One stumbling block is that venture capitalists typically want to make investments of between USD250,000 and USD1 million. An East African tech startup with 10 employees can run on USD50,000 for a year.

What's needed is a combination of wealthy African businesspeople who are willing to invest small amounts in early-stage startups and patient, locally-based venture capitalists who know how to help companies in Africa succeed. Venture capitalist Omoigui of Echo VC Partners plans on launching a program in Nigeria for teaching businesspeople how to invest in startups—becoming so-called angel investors. That should happen in every tech hub across the continent. And, ultimately, somebody needs to pool angel capital into funds so individual investors can share risks and rewards. Meanwhile, Hasso Plattner Venture Partners Africa provides the model for how venture investing should be done in Africa. The firm, which was established in Cape Town, South Africa, in 2005 by SAP AG co-founder Hasso Plattner, has made 11 investments so far, all of them in South Africa. Now the firm plans on expanding to Nigeria and Kenya.

The directors at HPVP Africa are acutely aware of the need to establish healthy innovation ecosystems to serve as petri dishes for startups. They help out by staging conferences that bring together business thought leaders with entrepreneurs. They also co-sponsored IBM SmartCamp in South Africa. "We have tens of millions to invest but not many investment opportunities," says Marc Balkin, a partner at HPVP Africa. "We want to do things that will improve the climate for entrepreneurship."

## Culture

One of the most important changes that could improve the climate for entrepreneurship is cultural. In South Africa during apartheid days, black Africans were discouraged from owning businesses. As a result, there's no established tradition of entrepreneurship and there are few role models for young Africans. In addition, across the continent, families who scrape together funds to put their children through university want them to get secure jobs with steady paychecks when they graduate. They put incredible pressure on their children to join corporations. One last thing: in Silicon Valley, failure by entrepreneurs is tolerated—even celebrated. People learn by taking risks and making mistakes. In Africa, failure in business is shameful. That puts a real damper on the startup economy.

How to you change culture? African business leaders hope that after today's crop of entrepreneurs builds successful companies, the startup path will be more respected by African families and more compelling to youngsters. If that happens, there will be more entrepreneurs, more success stories and more people willing to take risks. It's a self-reinforcing cycle.

Already, there are a handful of examples of African startup entrepreneurs who have made good in a high-profile way. South African Mark Shuttleworth, for instance, sold his Internet security startup, Thawte, for USD575 million, which he used in part to become one of the first space tourists, travelling aboard the Russian Soyuz TM-34 million to the International Space Station in 2002. But success stories like Shuttleworth's are still rare.

South African businessman Ezra Ndwandwe isn't waiting for conditions to improve. He's the producer of *The Big Break Legacy*, a reality TV show aimed at identifying, educating, inspiring and empowering entrepreneurs. In the weekly series, contestants complete in real-life startup challenges to win a 5 million Rand (USD500,000) investment prize. In the first season, in 2012, the show attracted over one million viewers per episode, and was ultimately rebroadcast on CNBC in 48 other African countries. "This is about changing culture—showcasing entrepreneurship as an alternative career," says Ndwandwe. "We have to change the national dialogue from one about government creating jobs to focus on businesses and government working together to create businesses that will give us the jobs we're looking for."

The *The Big Break Legacy* winner Graham Rowe had little more than an idea for a business when he entered the contest. Since he won, his idea has blossomed into Sancreed, a mobile-phone-based service designed to help people with chronic diseases manage their health. Sancreed is still tiny, with only a handful of employees, but the technology is being tested in clinical trials and Rowe is hopeful. He believes his service could save the healthcare system many millions and improve the lives of tens of thousands of patients. "I wasn't nearly ambitious enough when I started," he says, but competing on the show gave him fortitude and confidence. "When you're an entrepreneur, it's you against the world. You have to learn to be strong when people are saying 'No' to you 99 percent of the time."

## How IBM helps build innovation ecosystems

Wherever IBM operates in the world, it collaborates with governments, universities and businesses to build social and economic capacities. The need for such collaboration is even more pressing in emerging economies, so IBM has developed special programs targeted at those countries. In addition, IBM's leaders look for ways to participate in strategic initiatives that have the potential to transform countries and cities—helping them to work better for the benefit of citizens and businesses alike. In Africa today, a number of IBM's activities are aimed at helping to build innovation ecosystems.

### Research initiatives

When IBM established its first research laboratory on the campus of the Catholic University of Eastern Africa, it represented a commitment not just to Kenya but to all of Africa. The overall goal of IBM Research is to produce innovations that matter for IBM and the world. In each of the labs, engineers and scientists work on a wide range of projects—everything from exploratory efforts that might not bear fruit for more than a decade to projects that make a difference for clients immediately. The same is true in Africa. Initially, lab director Kamal Bhattacharya is concentrating on plucking technologies from other IBM labs and applying them to pressing problems. Over the long haul, the lab staff will perform fundamental research that could transform African society.

Before setting up the lab, IBMers consulted with government, university, business and civic leaders to identify their priorities. In the end, they decided that the initial focus of the lab would be e-government, using technology to improve traffic and water systems and designing programs that would help build up science and technology skills. A key element of the lab will be the Resident Scientist program, where African graduate students will be invited to work at the lab and collaborate with IBM researchers.

Already, lab director Bhattacharya has brought technologies to bear from IBM's global network of research labs. For example, the lab staff took traffic monitoring technology from IBM Research—Tokyo and applied it to Nairobi's traffic congestion

problem. The system was designed for Singapore, a wealthy city with an abundance of traffic monitoring cameras. Nairobi has only a few cameras in place, so the researchers used a set of sophisticated algorithms to derive accurate, real-time information about traffic in Nairobi based on a small amount of data. It's an example of how technology originally created for a developed economy can be adapted for use in Africa.

IBM is keenly aware of the strategic initiatives of the governments in countries where it operates, and aligns its strategies and resources with them. In South Africa, IBM and its partner, ASTRON, the Dutch space agency, are partnering with the South African National Research Foundation on a long-term research collaboration aimed at creating an information technology system for managing the multi-governmental Square Kilometre Array project. That's a collaboration between 10 countries aimed at building the largest-ever radio telescope—made up of more than half a million antennas scattered across southern Africa and Australia.

South Africa hopes that SKA, which is to be completed in 2024, will become a major source of economic growth and skills development. Indeed, the project is rapidly becoming the nexus of its own innovation ecosystem. Hundreds of engineers, scientists and students are already working on different aspects of the project, and that network will expand to include dozens of companies as designs are completed and construction begins.

When SKA is fully operational, it will pose the ultimate big data challenge, producing roughly 14 exabytes of data per day. The technologies that IBM, ASTRON and SKA South Africa are working on will address computer science problems posed by that huge volume of data—and the solutions they come up with will not only be applicable to SKA but will help lay a foundation for a new era of computing worldwide. Jasper Horrell, the general manager for science, computing and innovation at SKA South Africa, says it's vital for his country to play a role in such a fundamental shift in science and technology. "We're developing a skills base in high tech that can be applied to the telescope, but with the idea that many of these people will move out into the economy and set up new companies or strengthen existing high-tech companies," Horrell says.

### Skills development programs

With more than 400,000 employees worldwide, IBM benefits from having a strong talent pool of potential employees in every country where it operates. And so do its clients. So the company has an extensive program aimed at promoting science and technology skills development at universities. Universities can get help in updating their curricula to meet today's demands. Professors can get access to software, hardware, course materials, and books—all at no charge. And faculty members can secure grants to fund their research or even carry on collaborative research with IBM scientists.

Because of the skills challenges in Africa, IBM is developing close relationships with a number of African universities aimed at filling the skills gap. In 2012, IBM formed a partnership with Stellenbosch University in South Africa, providing equipment, software and training for post-graduate computer science students. In 2013, the company partnered with three leading universities in Kenya—Strathmore, Riara University, and Jomo Kenyatta University of Agriculture and Technology. The focus is on some of today's hot-button technologies, including mobile communications, big data analytics and cyber security.

Earlier, we launched an IBM Technical Institute program, beginning in Mauritius. The program, which is open to academia, IT specialists and IBM clients, helps them identify technology solutions to problems facing businesses and the public sector in Africa. IBM provides the technology and trainers. The Institute is being expanded to 10 countries, including Ethiopia, Mozambique and Senegal.

Another university program that IBM is involved in focuses on business skills. The Leadership Education and Development (LEAD) program brings together MBA students from Africa with faculty and students from leading US universities and IBM executive trainers. In the first LEAD engagement, six East African MBA students traveled to the University of Notre Dame and spent seven weeks taking special courses taught by Notre Dame faculty and IBM executives.

IBM also collaborates with some of its large clients to promote skills development for society as a whole. One such arrangement is with Airtel, the Indian mobile communications carrier for which IBM provides services in more than one dozen African countries. In April, the two companies established a Mobile Centre of Excellence at the University of Ghana. The goal is to provide technology and skills training to help students develop new products and services and, potentially, to launch startups to take their innovations to market. Airtel and IBM plan on establishing additional centers of excellence in Africa, starting with Nigeria and Kenya.

### Help for entrepreneurs

How does a giant global corporation like IBM help startup entrepreneurs? Well, we don't invest in startups directly, but we run a variety of programs aimed at helping them launch and succeed, so they have the potential of growing up to be big companies some day.

Chief among them is the IBM Global Entrepreneur program. Through this program, IBM develops relationships with entrepreneurs, venture capitalists and tech hubs. We bring people together with the goal of forging new relationships and developing business skills. In 2013, the program is conducting a Mentor Days event in Nairobi. In addition, a two-day SmartCamp contest, open to entrepreneurs from all over Africa, is being held in Johannesburg.

The SmartCamp program has already contributed to some notable successes in Africa. In addition to MoDe, Sproxil Inc., a 2010 participant, is helping communities in Africa combat the problem of counterfeit drugs. Sproxil, which is based in Boston but has roots in Africa, received honorable mention in IBM's SmartCamp World Finals. Sproxil provides pharmaceutical companies with real-time data about drugs being sold in developing nations, which they can use to shut down illegal operations.

An outgrowth of the SmartCamp program is HealthXL, which focuses on a single industry, healthcare. The initiative is a partnership of IBM, the Cleveland Clinic, StartupBootCamp and other organizations aimed at helping startups produce technology-based solutions to healthcare challenges. In early 2013, executives from eight startups from around the world gathered in Dublin, Ireland for a 12-week intensive course designed to help them accelerate growth. Their teachers and mentors included IBM executives, venture capitalists and healthcare industry executives. One of the participating startups is ClaimSync Ltd., of Accra, Ghana, a provider of claims management services for insurance companies and healthcare providers. “I’m confident we’ll come out of this program with a clearer plan for achieving sustainability,” says Seth Akumani, ClaimSync’s CEO.

IBM is also adapting some of its long-established skills-development programs to help promote entrepreneurship. IBM Innovation Centers have been set up all around the world to help IBM clients and business partners learn about new technologies and get hands-on assistance for creating solutions to business problems. Already, IICs are operating in South Africa, Morocco and Kenya, with the most recent of them opening in Nairobi. In Africa, the program is being expanded to address the needs of startups, as well. “We plan to have a continual drumbeat of activity around entrepreneurship,” says Gloria Powell, the IBMer who is setting up the IIC in Kenya.

### Building a Smarter Planet

Around the world, IBM has engaged with thousands of companies and government agencies to create Smarter Planet solutions—technologies that take advantage of big data, interconnectivity and analytics to make the world work better. IBM is convening gatherings of business, government and university leaders in several African cities to identify priorities and consider potential solutions. The first such exercise, conducted in 2012 in Nairobi, resulted in a [report](#) that highlights transportation, energy and public safety as three critical areas to address. A second exercise, undertaken in Accra, Ghana in 2013, produced a [report](#) focusing on city services, transportation and energy.

There’s an important role for startups in the Smarter Planet agenda. Indeed, all of the participants in the IBM SmartCamp program are focused on Smarter Planet-style solutions. As an outgrowth of the SmartCamp program, IBM seeks opportunities to partner with participants, either by providing technology that expands their capabilities or combining marketing and sales efforts. For example, Sproxil forged an alliance with IBM and improved its service using IBM analytics technology and cloud computing resources.

Smarter Planet solutions take hold where innovative technologies respond to the critical needs of societies. That’s one of the reasons why in April 2013, IBM assigned each of its eight newly named IBM Fellows to “adopt” one of the emerging markets as a technology ambassador. The idea is that these technology thought leaders will learn first hand about the needs of developing economies and will serve as liaisons between IBM’s global network of innovators and the governments, companies and universities in Africa that can benefit from cutting edge technologies. In Africa, the ambassadors will interact with Kenya, South Africa, Nigeria, Egypt, Ethiopia and Morocco.

### Corporate social responsibility

IBM's Corporate Service Corps, which is modeled on the US Peace Corps, has sent nearly 60 teams of IBM volunteers to Africa in the last five years to help communities address fundamental problems. So far, they have helped out in eight countries, including Ghana, Nigeria, Senegal, South Africa, Tanzania, Kenya, Egypt and Morocco. In 2013, the roster will expand to include Ethiopia and Tunisia. The teams spend three months preparing for their engagements and two to four weeks on the ground, gathering information and fashioning proposals addressing everything from economic development strategy and skills development to transformations of government agencies and businesses.

These engagements help to build or support innovation ecosystems in a variety of ways, both directly and indirectly. In Thies, Senegal, for instance, a 14-member team of IBM experts from around the world presented city leaders with a proposal for growing the economy through bolstering entrepreneurialism, agricultural exports and education. Strengthening the startup culture was a key focus for the group. Working with nonprofit organizations, the IBMers helped shape an entrepreneurial training program for women and young adults. They also proposed a mobile phone texting application for entrepreneurs to use to better track orders, sales and inventories.

As the Corporate Service Corps continues to evolve, its focus is increasingly on strategic engagements that have the potential to improve economic and living conditions for large numbers of people. This isn't a feel-good exercise. It's about sparking new thinking and social transformation.

### The future of innovation ecosystems in Africa

After years of rapid expansion in Africa, IBM has learned some important lessons. For starters, companies need to forge solid bonds of trust and cooperation with all of the institutions of society, from government and businesses to universities and social service organizations. Second, multinationals like IBM need to listen to local leaders and people, understand their priorities, and respond. Also, big tech companies can't assume that just because they possess successful technology solutions for developed economies, that they know what's going to work in emerging nations. It's best to get to know a place deeply before proposing solutions, and to encourage and enable home-grown innovations.

One of the realities of doing business in Africa is the realization that these countries must find their own way. They have to innovate their way to the future. So innovation ecosystems aren't just a necessary element of economic progress; they're a way to discover the path forward for a society.

In Kenya, government and business leaders are experimenting with new ways of thinking and of getting things done. Bitange Ndemo, the country's permanent secretary in the Ministry of Information and Communications, traveled the world to study the tech industry development models. He came away with a firm conclusion: it wouldn't do for Kenya to mimic the strategies of India or China, today's rising tech stars. He observed that India, with its huge IT outsourcing operations, and China, with its massive high-tech manufacturing infrastructure, are benefitting greatly from the roles they play in the global tech industry, yet the countries and companies that gain the most from their activities are the ones in North America and Europe that get the high quality and inexpensive products and services they generate. Instead of providing low-cost labor for Western societies, Ndemo believes, Africa should use information technology in transformational ways to dramatically improve the efficiency and effectiveness of its own governments, companies and infrastructure.

That's a big thought, but Ndemo isn't the only one who's thinking big. In Africa, we have met people from all strata of society who are imagining things that were previously considered impossible. Take Gregory Rockson, co-founder of M-Sika, a mobile money service for Africans living overseas who send money back home. The technology leapfrogging that Africa is doing in mobile communications convinces him that there will be other opportunities for Africa to lead the rest of the world in the years ahead. He says: "We can change the image of Africa from a land of misery to a land of opportunity that will change the global order in the next decade."

What's the role for IBM in Africa's innovation ecosystems? To help feed the momentum. As a strategic partner with governments, universities, established businesses and startups, IBM provides a wealth of technology know-how and problem-solving expertise that helps kick start initiatives and accelerate the speed of change. Mark Dean, a longtime IBM Research executive who is the chief technology officer for IBM in Africa, believes a few big success stories will get the wheels of progress turning. "What's required is an example where a country and companies form a partnership and make a big bet, and everybody benefits," he says. "Then other countries will follow."

Africa is coming into its own. Progress won't always be easy or fast. But IBM plans to be there for the journey.



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