

# CITY INNOVATION SYSTEMS: The Metro Manila Experience<sup>1</sup>

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## I. Introduction

City innovations, as defined by leading Southeast Asian researchers in urban and innovation studies, refer to new or improved solutions that contribute to enhanced liveability, prosperity, and equity of the city. These may be technological products, service or processes; institutional or organizational developments; administrative or legislative policies; or socio-cultural practices that create a more liveable environment, promote better economic conditions, and produce a more equitable social structure. City innovations cover both social and commercial innovation.

Innovations encompass informal and formal institutional arrangements and their dynamic interactions with different actors in the innovation system. These interactions lead to the development, adoption, and diffusion of the innovation. Actors in the city innovation include not only the traditional participants in the triple helix innovation framework (academe, government, and industry) but also non-government organizations, grassroots and marginalized groups, and mass media that help in the delivery of innovative solutions to the city residents. Innovations that address urban issues in Asian mega cities are the highlight of this study.

Urban issues or concerns have been addressed by different parties using varying innovative solutions. These solutions can be totally different products, services, or processes, or adoption of existing concepts that have been tried in other places but totally new to the city. These may also be improvements in existing products or programs. City innovation in this study is assessed using the following criteria: novelty, impact, equity, economic and financial feasibility, environmental sustainability, transferability, and political acceptability. We build on previous studies on urban or city innovation systems that have been done to document innovation policies and strategies (e.g., Park, 2001; Vayrinen and Smeds; Morgan, 2007; and Perlman 1990). Similarly, we aim to develop and sustain city competitiveness.

It is worth pointing out that a city is usually a conglomerate of different towns and municipalities around a major urban place. This conglomeration forms a “city system” or a “megacity.” The megacity can be considered a region. Urban or city innovation can therefore be likened to regional innovation, given the number of local government units that comprise the mega city. Park (2001), in his examination of regional innovation strategies in Korea, concludes that the success of a regional innovation system is positively affected by five policy issues: industry clustering within

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the region, the presence of habitats for innovation and entrepreneurship, collective learning processes and innovation, social capital, and global network promotion.

Innovation is also considered a major process in urban planning and implementation (Vayrinen and Smeds, 2007). Morgan (2007) supports the concept of industry clustering in urban areas as an effective way promoting economic growth, generating employment, and achieving social equity in city systems. Perlman (1990), who analyzed the growth and development of cities, finds that urban areas, due to the influx of migrants from rural areas, experience unplanned growth and thus are prone to social problems like the lack of housing facilities and unemployment.

The many challenges presented by poverty and uneven development in the city require urban planning to address difficult social—and not just economic—issues. More innovative policies and strategies are needed. More than government intervention, the active involvement of businesses, schools, non-government organizations, and cause-oriented groups at the grassroots level is essential to successful urban planning.

The focus of this study is the National Capital Region (Metro Manila), the Philippines' most urbanized region. We document and analyze the following city innovations at the firm, sector, and regional levels: Gawad Kalinga, medical tourism, and UP-Ayala Technology Park.

## **II. The Philippine Innovation Strategy: “Filipinnovation”**

The Philippines, considered a “Stage 1 economy” (poor and with low level of development), ranked 71<sup>st</sup> in the 2008-2009 Global Competitiveness Report. In terms of innovation and sophistication factors, it ranked 67<sup>th</sup>. This is supported by findings of the Global Entrepreneurship Monitor (GEM), which found that only 15 percent of Philippine business owners use new technology (Madarang and Habito, 2007). Innovation in terms of new products is also very low. (Seventy percent of businesses rely on old product offerings.) The size of the Philippine market, nonetheless, is considered a strong competitive plus.

The role of entrepreneurship and technology in the development of the Philippines has been officially recognized by Philippine presidents from Marcos to Aquino. Various programs have been developed by different government agencies to support enterprise and technology development and commercialization to generate jobs, alleviate poverty, and advance the economy. Yet for the past thirty years, the Philippines has been outperformed by its Asian neighbors and economic development has not been satisfactory.

This has led the government and concerned members of Philippine industry and academe to formulate an innovation strategy that aims to fast track the country's economic growth. This strategy is called “FILIPINNOVATION,” or innovation “by the Filipino for the Philippines and the global community” (Filipinnovation, 2007)

Filipinnovation involves four main strategies: strengthening human capital, supporting business incubation and acceleration efforts, regenerating the innovation environment, and upgrading the Filipino mindset. Table 1 present the strategy, tactics, and action agenda. (The action agenda identifies the specific roles that academe, industry, and government will assume. On a related note, the role of media has been recognized as an important input in the Philippine innovation strategy.)

**Table 1**  
**Filipinnovation Strategies**

Strategy	Tactics	Action agenda
Strengthening human capital	Formation of multi-sectoral consortia of institutions and / or experts working towards achieving strong technological R&D capabilities (tech) and management or services skills (non-tech) that will influence industries and public policy	<ul style="list-style-type: none"> <li>• Initiating competitive innovation in basic education</li> <li>• Establishing multi-stakeholder linkages</li> <li>• Upgrading skills and knowledge to better adapt to local and global demands through postgraduate education, and other forms of lifelong learning</li> <li>• Developing human resources with advanced knowledge and expertise</li> </ul>
Supporting business incubation and acceleration efforts	Encourage industry participation in incubation and human capital collaboration to ensure productivity and returns through innovation	<ul style="list-style-type: none"> <li>• Identifying and managing avenues for collaboration</li> <li>• Increasing government’s investments on physical infrastructure to support business technology innovation and acceleration</li> <li>• Engaging available existing Filipinos’ talents and resources for business incubation and acceleration, including those from the overseas Filipino community</li> <li>• Adopting a new business incubator model</li> </ul>
Regenerating the innovation environment	Engage stakeholders in the creation of clear government policies and efficient procedures which encourage innovative behavior	<ul style="list-style-type: none"> <li>• Creating an innovation strategy championed by public and private sector executives</li> <li>• Increasing innovation awareness and understanding in legislation</li> <li>• Leveling the playing field by setting a policy environment that supports competition (i.e. a sound IP regime)</li> </ul>
Upgrading the Filipino mindset	Filipinnovation: branding Filipino competitive innovation for sustainable development and global positioning	<ul style="list-style-type: none"> <li>• Increasing the role of multimedia in highlighting the essence and benefits of innovation in society</li> <li>• Having an Intellectual Property regime that is neither restrictive nor regulatory but rather serving as depository of innovative ideas which can inspire others to innovate competitively as well</li> <li>• Aid in increasing public awareness that competitive innovation entails a multidisciplinary approach</li> </ul>

		<ul style="list-style-type: none"> <li>Foster a culture of entrepreneurship through innovation</li> </ul>
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Source: Filipinovation: The Philippine National Innovation Strategy, 2007.

Innovation-promoting efforts have been mostly focused in Metro Manila, being the location of many important government offices, major industries, and big universities.

### III. Metro Manila

#### A. Facts and Statistics

Metro Manila or National Capital Region—the 18<sup>th</sup> largest urban center in the world—is composed of 17 local government units (16 cities and 1 municipality) with a total population of 11.6 million (NCSO, 2007 as cited in MMDA, 2010). The 16 cities are Caloocan, Las Pinas, Makati, Malabon, Mandaluyong, Manila, Marikina, Muntinlupa, Navotas, Paranaque, Pasay, Pasig, Quezon, San Juan, Taguig, and Valenzuela. Pateros is the only municipality. (See Table 2.)

Metro Manila is bounded by the Marikina Valley and Sierra Madre Mountain in the east; the Manila Bay in the west; Central Luzon in the north; and Laguna de Bay in the south. It has a total land area of 636 square km. In 2007, NCR registered an annual population growth of 2.11 percent. Population grew at an average rate of 1.7 percent from 1995 to 2007.

Among all regions in the Philippines, Metro Manila contributes the most to the domestic economy. Ninety percent of the country's private businesses, cultural, educational, and medical establishments are located in Metro Manila. The region accounted for 33 percent of Philippine GDP in 2008. In 2007, tax revenue collections by the Bureau of Internal Revenue (BIR) from Metro Manila comprise 41 percent of the Philippine total (NSCB, 2009). (Between 2006 to 2007, BIR Tax revenue collections grew at a rate of 11 percent. Detailed economic indicators are presented in Table 3.)

**Table 2. Metro Manila Land Area, Population and Growth**

<i>Local Government Unit</i>	<i>Land Area Sq. Km.</i>	<i>Population (2007 Census)</i>	<i>Population Density (Per Sq.km.)</i>	<i>2007 Annual Population Growth Rate</i>
Caloocan	53.33	1,378,856	25,855	2.2
Las Pinas	41.54	532,330	12,815	1.65
Makati	27.36	510,383	18,654	1.91
Malabon	15.76	363,681	23,076	.98
Mandaluyong	11.26	305,576	27,138	1.29
Manila	38.55	1,660,714	43,079	.68
Marikina	33.97	424,610	12,500	1.14
Muntinlupa	46.70	452,943	9,699	2.48
Navotas	10.77	245,344	22,780	.87
Paranaque	47.69	552,660	11,589	2.88
Pasay	19.00	403,064	21,214	1.77
Pasig	31.00	617,301	19,913	2.80
Pateros	2.10	61,940	29,495	1.05
Quezon	161.12	2,679,450	16,630	2.92
San Juan	5.94	124,187	20,907	0.87

Taguig	47.88	613,343	12,810	3.82
Valenzuela	44.58	568,928	12,762	2.21
TOTAL	638.55	11,553,427	18,093	2.11

Source: MMDA, 2010.

**Table 3. Economic Indicators for Metro Manila**

Indicator	Reference Period	Value	Source
Gross Regional Domestic Product (at constant prices, 1985=100)	2008	PhP 468.4B	NSCB
% share to Total GDP	2008	33.0%	NSCB
BIR Tax Revenue Collections	2007	PhP 622.2 Billion	BIR
BIR Tax Revenue Collection Growth Rate	2007	11.0%	BIR
Population	August 1, 2007	11,553,427	NSO
Population Growth Rate	1995-2007	1.7%	NSO
Number of Cities	March 31, 2008	16	NSCB
Number of Municipalities	March 31, 2008	1	NSCB
Number of Barangays	March 31, 2008	1,705	NSCB
Number of Registered Voters	March 17, 2009	5,999,706	COMELEC
Number of Telephone Lines Installed	2008	3,589,515	NTC
Telephone Density (per'000 Population)	2008	319	NTC
Motor vehicles registered	2008	1,670,150	LTO
Motor Vehicles Revenue Collection	2008	PhP 3.8B	LTO
Motor Vehicles Revenue Collection Growth Rate	2007-2008	5.5%	LTO
Consumer Price Index (2000=100)	April 2009	156.3	NSO
Employment rate	April 2009	86%	NSO
Unemployment Rate	April 2009	14%	NSO
Underemployment Rate	April 2009	12%	NSO
Average Family Income	2003/2006	PhP 266,000/PhP 311,000	NSO
Average Family Expenditures	2003/2006	PhP 218,000/PhP 258,000	NSO
Poverty Threshold/Poverty Incidence	2003 and 2006/2006	PhP 16,737 and PhP 20,566/7.1%	NSCB
Number of Schools			
Public Elementary	SY 2007-2008	511	DepEd
Public Secondary	SY2007-2008	213	DepEd
Tertiary (Public and Private)	SY 2007-2008	309	CHED
Number of Tertiary Enrollement	SY 2005-2006	671,583	CHED
Number of Tertiary Graduates	SY 2004-2005	108,396	CHED

Source: <http://www.nscb.gov.ph> retrieved Feb. 15, 2010.

Although Metro Manila is considered the most industrialized region in the country, majority of its land (44.83 percent) is dedicated to residential use. Commercial, industrial, and institutional uses account for 12.22, 7.62, and 6.9 percent of land use, respectively. Roads and open spaces make up 28 percent of NCR total land area. (See Table 4.)

**Table 4. Metro Manila Land use (As of 2007)**

City/ Municipality	Land Area by Land Use Type (sq.km)					
	Residential	Commercial	Industrial	Institutional	Parks, roads	Total
Quezon City	77.04	17.34	9.57	13.48	43.69	161.12
Caloocan	27.01	1.15	3.5	2.69	18.98	53.33
Valenzuela	16.76	0.62	6.6	0.01	20.8	44.59
Muntinlupa	21.5	2.8	2.03	0.78	19.59	48.7
Las Pinas	23.68	6.41	1.42	0.68	0.8	32.99
Marikina	8.54	1.33	6.15	1.1	4.38	21.5
Manila	21.73	7.03	2.57	3.67	5.46	40.45
Paranaque	22.82	17.04	5.33	0.6	3.78	48.57
Taguig	2.8	12.15	0.07	0.8	23.58	45.35
Makati	10.31	4.16	0.39	3.9	6.61	25.27
Mandaluyong	4.14	1.97	0.6	0.81	5.35	12.87
Malabon	9.17	0.31	2.44	0.38	11.1	23.4
Pasay	5.67	3.65	0.23	6.87	1.63	18.05
Pasig	18.66	2.2	4.68	0.5	4.96	31
San Juan	3.77	0.53	0.29	0.4	0.95	5.94
Pateros	1.11	0.15	0.01	0.09	0.49	1.85
Navotas	4.03	0.14	1.5	0.11	4.91	10.69
Total Area	278.74	75.98	47.38	42.87	178.74	621.71
% of Total Area	44.83	12.22	7.62	6.9	28.43	100.00

Source: Mega Manila Public Transport Study, JICA, April 2007 as cited in MMDA, 2010.

## **B. Governance of Metro Manila**

Metro Manila's 16 cities and 1 municipality are independently managed, but governance efforts between local government units (LGUs) are coordinated through the Metro Manila Development Authority (MMDA). The MMDA was created in 1995 through Republic Act No. 7924.

The MMDA is governed by the Metro Manila Council, composed of mayors of all cities and municipalities in Metro Manila, the President of the Metro Manila Vice-Mayors League, and the President of the Metro Manila Councilors League. The council is headed by the Chairman (a Cabinet-rank position appointed by the President) and assisted by a Deputy Chairman, a General Manager, and an Assistant General Manager

for Planning, Operations, and Finance and Administration. (All appointed by the President.)

The MMDA provides services that have metro-wide impact and go beyond the political boundaries of the different local governments: (1) Development planning; (2) Transportation and traffic management; (3) Solid waste disposal and management; (4) Flood control and sewerage management; (5) Urban renewal, zoning, land use planning and shelter services; and (6) Health sanitation, urban protection, pollution control, and public safety. In the implementation and delivery of basic services in Metropolitan Manila, the MMDA is mandated by RA 7924 to maintain linkages with LGUs, national agencies performing functions at the local level, Non-Government Organizations (NGOs), People's Organizations (POs) and the private sector (MMDA, 2010).

For the initial operation of the MMDA, an appropriation of P1 Billion was authorized under RA 7924. Today, the MMDA's other sources of revenue are its share in the Internal Revenue Allotment, a national subsidy, local government contributions, and collections from fines, fees, and charges.

The MMDA traces its roots to the 1975 Metro Manila Commission, which was formed after a referendum. The commission acted as a central government, exercising executive, legislative, and administrative powers—including the authority to tax—over Metro Manila. Cities and municipalities comprising Metro Manila contributed 20 percent of their annual income as source of fund for the commission. The Governor, as head of the commission, and commission members were appointed by the president. Metro Manila effectively became a province with an appointed rather than elected head.

Although this decision was not popularly supported by the people, reforming instead of abolishing the Metro Manila Commission after the Marcos years was seen as a more prudent solution to the growing problems of the region. In 1990, Pres. Corazon Aquino transformed MMC to the Metro Manila Authority (MMA). The MMA was an interim body that had political authority to deliver basic urban services (land use planning and zoning, traffic management, public safety, urban development and renewal, management and control of operations affecting welfare and safety, and sanitation and waste management). It was headed by a chairman with a six-month term elected by Metro Manila's mayors.

### **C. Urban Concerns**

Metro Manila faces a number of challenges brought about by rapid population growth and lack of planning (Manasan and Mercado, 1999):

1. *Transport and Traffic Management.* Metro Manila has the most extensive and complex road network among regions in the Philippines. Major thoroughfares traverse different cities and municipalities within and outside Metro Manila. Worsening transport system and traffic conditions can be attributed to an insufficient road system, a rapid increase in car ownership, lack of quality public transportation services, poor enforcement of traffic regulations, and a lack of discipline by motorists

and pedestrians. There is also duplication of services and regulations enforced by different agencies involved in traffic and transportation management.

2. *Flood Control.* Flooding during intense rain or typhoons is a continuous problem in Metro Manila addressed by local and national government. Flash floods and regular flooding occurs during heavy rains and high tide seasons due to a poorly maintained and inadequate drainage system. Illegal encroachments on rivers and other waterways by informal settlers, business establishments, and residential houses worsen the problem.
3. *Solid Waste Management.* Solid waste collection and disposal remain issues in Metro Manila. About 75 percent of solid waste in Metro Manila is collected, while the remaining 25 percent is illegally dumped in open spaces or waterways (JICA, 1998 as cited in Manansan and Mercado, 1999). LGUs are responsible for waste collection while the MMDA is responsible for waste disposal. Identifying disposal sites is a major problem in Metro Manila, and the division of tasks between the local governments and the MMDA blur accountabilities on how solid waste should be managed.
4. *Land Use and Housing and Urban Poverty.* While most of Metro Manila's land is already devoted to housing, population growth in the megacity exacerbates existing housing problems. These range from high rental rate, increased numbers of informal settlers, to a lack of available housing for its residents. Low incomes and the high cost of land prohibit many residents of Metro Manila to own houses. (About half of Metro Manila residents do not own the land they occupy.)

#### **IV. City Innovations and Development of Megacities**

The economic development of nations always start with the economic growth and development of major cities (Johnson, 2008; Reinert, 2007; Jane Jacobs,1969; Hall,1998; Botero, 1606 as cited in Johnson (2008)). Cities' diversity of crafts and industries, interactions with agricultural districts, strong justice and educational systems, and accessibility to ports of trade with other cities and countries contribute to the development of cultural and artistic creativity which, in turn, hape technological innovations (Hall, 1998).

Cities provide innovation space. The presence of the basic factors of production, materials, energy, and knowledge make innovation conducive in cities. These factors have allowed these places to grow and develop (Boulding, 1981 as cited in Johnson, 2008).

The presence of resources that can lead to production growth and development in cities have also led to problems. Economic growth from production, for instance, often

creates environmental challenges. While generating and refining new knowledge (new innovations) can be solutions to such complex problems, the realization is that innovation in the city can be understood a total system that solves problems but creates, through its generated solutions, causes of future problems. This dynamic in innovation systems creates turbulence and complexities that encourage creativity and innovation.

The sheer number and variety of people, professions, transport modes, and trade volume of cities can put significant strains on resources and thus create long-term environmental and social problems. The complexity of cities' situations make people in cities creative in developing "urban order," or the framework of city life (Johnson, 2008).

There are two types of urban order: infrastructure order and moral and social order. Infrastructure refers to street, water supply, sewage systems, solid waste disposal, and energy and transport. Moral and social order pertains to laws, rules and regulations, social norms and ethics. Both types of order require collective action from private and public sectors, administrative and institutional innovativeness, and technological development. As problems become critical and urban order more difficult to achieve, radical innovation emerges. Overall, the complexities of city life and the problems that emanate from it make cities drivers of innovation.

Studies on innovation systems have primarily focused on technology and how firms, industries, regions and nations have economically benefited from technological progress. Considerations of social issues in innovation have not been widely studied. As city innovation systems concern not just infrastructure but also laws, norms, and ethics, innovation should also be understood as an activity with social and cultural dimensions that need to be analyzed.

## **V. City Innovations in Metro Manila**

Metro Manila, like other ASEAN megacities, is confronted with problems brought about by economic growth and development. As previously mentioned, we identify and analyze three innovative Philippine solutions to some of Metro Manila's most pressing urban issues: Gawad Kalinga; Medical Tourism; and UP-Ayala Technology Park.

### **A. Gawad Kalinga<sup>2</sup>: A Social Innovation**

As the country's premier urban center, Metro Manila is a magnet to migrants from provinces all over the Philippines. Unsurprisingly, poverty incidence in Metro Manila is lower

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<sup>2</sup> This section is a summary of the working paper, Habaradas, Raymund and Aquino, Martin. 2010. Gawad Kalinga: Innovation in the City (and beyond). Working Paper

than those of other regions. However, its relatively larger population means that the total number of poor people in the megacity is higher compared to most other parts of the Philippines. The latest official poverty statistics (2006) indicate that approximately 10 percent of Metro Manila's 1.138 million residents are poor.

Because of poverty, a significant number of households in the Philippines resort to informal housing in congested areas where living conditions are very mediocre, if not inferior. The problem of illegal settlements (also known as spontaneous settlements or "squatting") is particularly pronounced in Metro Manila. Spontaneous settlements are primarily characterized by chaotic growth and land division, lack of basic infrastructure, and lack of basic services. They also give rise to social problems such as "high levels of criminality, health and sanitation problems, and poor quality of housing" (Santos-Delgado, 2009).

*Gawad Kalinga* is a program aimed at addressing social problems attendant to the lack of proper urban housing in Metro Manila. As of 2006, the National Housing Authority (NHA) has estimated 726,908 households living as illegal settlers or "squatters". This translates to 51.6 percent of the total illegal settlers in the country.

Gawad Kalinga—literally meaning "to give care" in Filipino—is a non-government community development program aimed at addressing social problems attendant to the lack of proper urban housing for poor Filipinos, particularly in Metro Manila. Figures from the Housing and Urban Development Coordinating Council (HUDCC)—set up in 1986 via Executive Order No. 90 in response to the problem of insufficient urban housing—estimate a total of 199,398 households living in informal settlements across Metro Manila as of 2010. This accounts for more than a third (36.20 percent) of the total number of informal settlers in the Philippines.

Illegal settlements are poverty-stricken communities lacking in basic infrastructure and services. Crime, health and sanitation problems, as well as environmental pollution and degradation characterize these communities. While the Philippine government addresses this problem by relocating illegal settlers outside Metro Manila, provisions for basic services and infrastructure remain lacking in resettlement areas. This lack of capabilities and opportunities outside the region exacerbates what is already insufficient shelter assistance for a growing number of poor and low income residents, making the city housing problem endemic. These observations are consistent with government statistics which show that among Metro Manila households classified as "low income" and "urban poor," tenants account for 34.9 and 36.9 percent of the total, respectively, while sharers accounted for 9.3 and 11.7 percent, in that order.

GK was initiated by a cause-oriented group in cooperation with Catholic Church-based organization Couples for Christ. Through volunteers from different sectors, places, and income groups, GK constructs houses for the marginalized, or those who were relocated or living in depressed areas. A Partnership Management Group and a Builders Institute have been organized under GK to allow simultaneous, focused efforts to continually generate resources, partnerships, and volunteers for the project.

Other than house construction efforts, GK has the following notable key, complementary initiatives: values education for pre-school children (“Sibol”); academic and extracurricular support for school-age and teenage children (“Sagip” and “Siga”); health workshops and partnerships for the provision of basic medical and dental services (“Gawad Kalusugan”); solid waste management and the incorporation of environmentally-conscious materials into village homes and livelihood programs (“Green Kalinga”); and the promotion of self-sufficiency and sustainability via community farms (“GK Bayan-anihan”), local tourism (“GK Mabuhay”), and the formation of neighborhood associations. The goal of all these is to create and develop within GK communities the capability to address social issues on poverty, peace and order, livelihood, and environment. It is this comprehensive package of programs that distinguish Gawad Kalinga from similar organized self-help housing efforts in other parts of the world, such as the United States’ Habitat for Humanity and Costa Rica’s *Fundacion Promotora de Vivienda* (FUPROVI). (Large Filipino and multinational corporations, such as Unilever and Jollibee, as well as Overseas Filipino Workers (OFWs) are also notably involved in many GK projects as major financiers and volunteer sources.)

Operationally, forming a GK community involves a community organizer and a caretaker team consulting and subsequently building the capabilities of local stakeholders such as barangay and church officials—after which a neighborhood association (“kapitbahayan”) is formed for implementing the programs mentioned. The ultimate goal of the *kapitbahayan* is to be a “self-propelled people’s organization,” through which members feel a strong sense of ownership and responsibility toward GK programs and services via prudent management of neighborhood finances, the establishment of strong linkages with GK partners, and sustained conduct of livelihood programs and community assemblies and ecumenical gatherings. At this point, the role of the caretaker team shifts from implementing to mentoring.

Gawad Kalinga started in 1995 as a youth camp in Bagong Silang, one of the biggest slum areas in Metro Manila. The initiative eventually developed in to a community building project that includes house construction, education, and community empowerment. Today, there are 1,400 Gawad Kalinga Villages and 33,439 GK houses in about 2,000 communities all over the Philippines (317 villages and 8,378 houses are in Metro Manila). Experts have appraised the total value of development generated by Gawad Kalinga at more than Php8 billion (Php3 billion for houses, P0.5 billion for schools, clinics, and other infrastructure, Php2 billion for land and site development, Php2.5 billion for social preparations, donated professional services, and volunteerism, programs for health, education, and livelihood) (Inquirer, 2010).

In line with its achievements, GK, since 2003, has expanded its ambitions to include the realization of “a first-class Philippines and a world-class Filipino”—a vision its members and partners call “GK2024.” GK2024 is being executed in three seven-year phases, with each phase focused on particular aspects of community development (“social justice,” “social artistry,” and “social progress”). (It is also targeting the involvement of a million volunteers.) GK is now known throughout the Philippines as a nation-building movement.

The Gawad Kalinga model is being replicated in different parts of the world (e.g. Indonesia, Papua New Guinea, Cambodia, India, and South Africa), and is now recognized as a

benchmark in developing and empowering communities. Its innovations in developing community governance structures and relationships make GK an important social innovation for study.

## **B. Industry Clustering Innovation: Medical Tourism<sup>3</sup>**

*Medical Tourism* is a government-initiated program being participated in by private hospitals in the Philippines. These hospitals are concentrated in Metro Manila. Although medical tourism is not a new concept, the novelty in the processes and strategies is documented and analyzed. Medical tourism emerged in the Philippines in the 1960s, when patients sought the help of Catholic faith healers (De Vera, Huang, Khan, Qin & Tan; 2008). The chief objective of medical tourism is the creation of more employment opportunities for the people in Metro Manila and other places where this type of tourism can be promoted.

In the 1970s, the Philippine medical tourism sector expanded its range of services to include cardiovascular and pulmonary treatments with the establishment of the Philippine Heart Center, National Lung Center, and the National Kidney and Transplant Institute. These not only attracted patients from North America, Europe and Southeast Asia but also doctors, nurses, and other healthcare professionals from the region “to study, train and practice [their respective specializations] in these hospitals” (Garcia & Besinga, 2006).

Accordingly, the impact of health tourism has not been limited to health care providers and the foreign and domestic patients served—but also to tourism, business process outsourcing, and academic, government, and industry associations (e.g. Spa Association of the Philippines and the Pharma and Health Association (De Vera Huang, Khan, Qin & Tan; 2008)).

As the industry continued to grow in the early years of the 21<sup>st</sup> century, the government launched the Philippine Medical Tourism Program (PMTP) in 2004 with the objective of implementing a cohesive development strategy that would successfully promote the industry (Garcia & Besinga, 2006). While the Department of Health heads the task force that aims to anticipate and respond to the needs of the sector, some of the public institutions that the agency works with include the Board of Investments, the Department of Energy, Department of Tourism, and Department of Trade and Industry. The European Chamber of Commerce, Freedom to Fly Coalition, Hotel and Restaurant Association of the Philippines, National Association of Independent Travel Agents, Philippine College of Physicians, and Philippine Medical Association, act as private sector counterparts.

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<sup>3</sup> This section is a summary of the working paper, Castillo, Paulyne and Conchada, Mitzie. 2010. Towards Innovative, Liveable, and Prosperous Megacities: Medical Tourism. Working Paper

Today, owing to the support of public policy and private sector investments, the domestic industry is able to provide a number of procedures and treatments under the medical care, surgical care, women's health, dental care, and optometric sub-sectors. The Philippine government estimates the country's health and wellness tourism to have contributed US\$1.65 billion to the country's 2005 GDP (1.26 percent of the total). The sector is also said to have grown by 2.4 percent in 2006 and 8 percent in 2007. With the aid of public-private partnership, however, the government estimates the potential of the industry to be US\$2 billion a year—equivalent to some 700,000 medical tourists annually (Vequist & Valdez, 2008).

Hospitals engaged in medical tourism are concentrated in Metro Manila. This is due to its accessibility to amenities like hotels, transportation, and medical facilities and personnel. This provides easy access to resources and optimizes costs to medical tourists. There are five government tertiary hospitals that participate in the medical tourism program, all clustered in Quezon City. These are East Avenue Medical Center, Lung Center, National Kidney Institute, Philippine Children's Medical Center, and Philippine Heart Center. Private hospitals participating in the medical tourism program include Asian Hospital and Medical Center (Muntinlupa City), St. Luke's Medical Center (Quezon City and Taguig City), Makati Medical Center (Makati City), and Medical City (Pasig City).

The Medium-Term Philippine Development Plan 2004-2010 (MTPDP) supports the promotion of medical tourism through the job creation thrust in medical services and tourism; establishment of medical zones, policy and administrative reforms for entry and practice of foreign medical specialists in designated medical zones; and the development of a national strategy to promote tourism.

The Philippines, to its advantage, offers lower prices of medical services compared to its Asian neighbors (between 20 to 195 percent lower). This is offset, however, by the high cost of medical travel—on average, 33 percent higher than Thailand and Singapore. Another roadblock to the success of Philippine medical tourism is the lack of enabling infrastructure to support the needs of the medical tourists: airports, reliable power supply, telecommunications services, roads and highways, and a pool of language interpreters in languages other than English (Chinese, Korean, Japanese, Bahasa). There is a lack of capable medical professionals due to the migration of doctors and nurses to other countries.

The challenge for the Philippines is to find its own niche in global medical tourism, as its closest rivals in the region—India, Malaysia, Singapore, and Thailand—have specialized in specific services. Malaysia focuses on cosmetic surgery and alternative medicine (Keckley and Underwood, 2008). India and Singapore is well-known for complex procedures like heart surgery, while Thailand is popular among European tourists for cosmetic surgery. Above the challenge of being competitive with its Asian neighbors, the Philippines should likewise address the issue of social equity as it develops its medical tourism industry. The need of the poor sector to have equitable access to medical care must be provided for as the medical tourism industry develops and grows.

### **C. Industry-Academe Partnership: UP-Ayala Technology Park<sup>4</sup>**

*UP-Ayala Technology Park* is a government-industry-academe initiative that aims to promote the development and commercialization of new technology. The Park, located in Quezon City, is a collaborative project of the University of the Philippines and Ayala Corporation that started in 1999. It offers physical facilities and assistance in business incubation and processes. In addition, the Park allows participating enterprises to tap into a network of academic researchers (for technology innovation and improvements), venture capitalists, and government agencies. The network provides the platform to share ideas, knowledge, and skills in order for start-ups to properly start and grow their businesses.

By creating a social system that facilitates the creation, diffusion and adoption of innovative solutions through coordinating and connecting related private and public initiatives, the UP-Ayala Park hopes to foster the creation of meaningful employment in sustainable businesses and the development of advanced skills and knowledge.

The experiences of those in the Park thus far suggest that the location and environment of the technology hub are appropriate for developing businesses.

## **VI. CITY INNOVATION ANALYSIS AND IMPACT**

The three identified innovations are analyzed with respect to how they impact the development of Metro Manila. Seven criteria (“dimensions of innovation”) are used in the analysis: novelty, impact, equity, economic and financial stability, environmental sustainability, transferability, and political acceptability. Aspects of innovation (product, process, paradigm, service, and institution) and three spatial dimensions (cognitive, information, and physical) are matched to each of the innovations to further understand the origin, growth, and development. A summary of this framework is presented in Tables 5 and 6.

At this point, it is worth pointing out that no formal city innovation system was in place when these three innovations were originated. Gawad Kalinga and medical tourism are results of socio-technical transitions (Hodson and Marvin, 2010) within the city. Gawad Kalinga is a program that intends to change traditional notions of community organization and development. Unlike most innovations, Gawad Kalinga is not technology-based at all. It is, rather, an institutional innovation based on partnership and community-building.

However, volunteerism—the reason behind GK’s success thus far—cannot be indefinitely sustained. Technological innovation should then be part of the design of the Gawad Kalinga villages in order to sustain the development and growth of the community. The impact Gawad Kalinga villages will have on cities in terms of urban

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<sup>4</sup> This section is a summary of the working paper, Beng Hui, Dennis. 2010. UP-Ayala Technology Hub City Innovation System. Working Paper.

migration, employment, transportation, and environmental concerns should now be integrated into GK planning. And as Gawad Kalinga villages are being replicated in different parts of Metro Manila, better policies and regulations must be developed to encourage its replicability in other cities in the Philippines.

On the other hand, medical tourism is an innovation on institutional configuration resulting from a co-evolution of social functions and social interests with technological developments. From the the private sector's clustering of industries within the city (hospitals and enabling tourism infrastructure), government policies and incentives were set in place to support job generation and the attainment of other foreseen economic benefits.

On this front, several initiatives must be undertaken. An enabling infrastructure to support the medical tourism industry must be provided. This infrastructure should consider the total impact of the industry to the cities in terms of human development, environmental issues, government regulations, physical infrastructure, and technology development. Science and technology should be used as the driver of a Philippine medical tourism that will address the needs of the global market and equitably benefits Filipinos regardless of income class.

The UP-Ayala Technology Park directly supports the newly-established Philippine innovation strategy through the development of knowledge resources or technology-driven businesses. It focuses on the three dimensions of an organization's knowledge resources (Carmona-Lavado et al., 2009): human capital (individual knowledge), organization capital (aggregate knowledge), and social capital (resources from interpersonal networks).

The collaboration of government, industry, and academe in the technology park venture is best strengthened through technology and business development. Academic institutions should consider introducing an explicit business orientation to its research and development activities in order to support business incubation programs of technology parks. This will mean curriculum reviews to support innovation and technology development initiatives through research; promotion of consultancy work of faculty with industry partners; and strong innovation and entrepreneurship-oriented internship programs for students. The technology park concept may also need to veer away from the real estate development concept and emphasize support of IT start-ups. On the part of the government, the participation of industry can be more encouraged through better policies on e-commerce and product and system innovation. This can lead to the development of more IT parks.

The three innovations studied define innovation in different aspects. Gawad Kalinga, hinged on relationship-building, is a new way of developing and involving communities. Medical tourism, through the integration of medical care and leisure, is a new way of looking at medical care. The UP-Ayala Technology Park is a replication of business incubation and real estate development through the triple helix

collaboration. All innovations are being replicated in different cities in the Philippines and are strongly supported by national and local government policies, as well as strong ties among industries, academe, and cause-oriented groups. This makes documenting indicators of success in these innovations essential.

**Table 5. Innovation Dimensions**

<b>Dimensions of innovation</b>	<b>Gawad Kalinga</b>	<b>Medical Tourism</b>	<b>UP-Ayala Tech Park</b>
<b>Product</b>	Housing/Community development	Healthcare/Leisure	Real Estate
<b>Service</b>	Community engagement	Medical travel	Business incubation
<b>Process</b>	Volunteerism	Clustering of helathcare facilities in MM	Collaboration among government, schools, and new ventures
<b>Paradigm</b>	Community building through involvement and partnership	Integration of health, travel and leisure	Academically based IT park
<b>Institution</b>	Government, NGOs, schools, businesses	Industries , Government	Government. Industries, schools

**Table 6. Innovation Aspects**

<b>Aspects of Innovation</b>	<b>Gawad Kalinga</b>	<b>Medical Tourism</b>	<b>UP-Ayala Technopark</b>
<b>Novelty</b>	Volunteerism	Integration of medical treatments and leisure	Business engagement of state university
<b>Impact</b>	Improved lives and community of informal city dwellers, restoration of human dignity	Job creation	New venture development and job creation
<b>Equity</b>	Sharing of resources among communities	Equity sharing to provide poor access to healthcare	State university access to income generation potential
<b>Economic and Financial Stability</b>	Donation and value based partnership	Private funding and management	Php6.5 billion investment and expected earnings of P200m
<b>Environmental Sustainability</b>	Focus on urban environmental concerns	Issue of land use and environmental degradation	Environment friendly design of IT Park
<b>Transferability</b>	Replicated in other major cities	Clustering in other major cities (Davao, Cebu)	Model for other state universities
<b>Political acceptability</b>	Strong support from local government	Collaboration of health care and tourism	Strong industry, academe, government collaboration

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