Pittsburgh's progress

RUST BELT CITY REINVENTS ITSELF AS A TECH HUB
Andy Warhol once said that “shopping is much more American than thinking”. If that is true, then Mr Warhol’s hometown of Pittsburgh is not very American. The city, located in south-western Pennsylvania, spends $3bn a year on university, corporate and government research and development, and each year produces more than 33,000 graduates.

But that was not always the case. Four decades ago, Pittsburgh’s economy was in tatters, with its population shrinking by 35% between 1970 and 1990. Relying heavily on its steel industry, the city learned a painful lesson. Its lack of industrial diversity left it vulnerable when steel mills began to close and thousands of people lost their jobs. Pittsburgh’s once sprawling metropolis was left depressed.

Surveying the wreckage, local authorities

Rethinking
Pittsburgh

Once the home of a steel industry and little else, Pittsburgh was all but written off in the 1970s and 1980s as that industry collapsed, however, the city’s focus on technological and biotech innovation, combined with an environment that encourages entrepreneurship, has turned its fortunes full circle. Michal Kaczmarski reports.

Host with the most: the choice of Pittsburgh to host the 2009 G-20 summit endorsed the city’s economic turnaround.
worked with business and university representatives to implement a strategy aimed at redistributing the balance between business sectors in the city. “In 30 years we went from an economy where 50% of employment was depending on one sector, to an economy where we have five main industries, of which none represents more than 23% [of the total],” says Dennis Yablonsky, CEO of the Allegheny Conference and the Pittsburgh Regional Alliance, both local economic development agencies.

When the strategy was implemented, some considered the sectors chosen as the ‘engines’ of Pittsburgh’s job-growth to be wildly optimistic. But that optimism has reaped dividends. “There are 1600 tech companies and 500 biotech companies in the Pittsburgh metropolitan area. Virtually none of those existed three decades ago,” says Mr Yablonsky.

**Incubating talent**

At the heart of the Pittsburgh revival story lies a strong research funding backing and a score of incubators helping local businesses to grow. “At the end of 1990s, I was aware there was a stream of research funding in south California and that it creates the environment for companies to grow. And I found out that Pittsburgh actually receives more biomedical research money than California. I checked it and it turned out to be true,” says Thomas Petzinger Jr, executive vice-president of Knopp Biosciences, a Pittsburgh-based pharmaceutical company that works on treatments for Parkinson’s disease and sclerosis.

At the end of 2010, Knopp sealed a licensing agreement worth up to $345m with Biogen Idec, one of the biggest players in the biotech industry. Such multimillion-dollar deals show that “Pittsburgh is a good place to do business and make investments”, says Mr Petzinger.

For Henry Thorne, co-founder of 4moms, a company that combines baby products with robotics, Pittsburgh was chosen as the business’s home because of the funding offered. “I moved here in 1992 because the city offered a funding programme for entrepreneurs. At that time I was based in Michigan and over there such a thing was unheard of,” he says.

After 20 years in operation, Mr Thorne’s company received $43m in funding (including $20m from Bain Capital Ventures secured in August 2012), sells its products in 24 countries and counts actress Jennifer Garner among its clients.

**Nice prices**

Pittsburgh’s economy is not the only thing that has reached a healthy state in recent years. Residents also enjoy the fact that Pittsburgh has one of the lowest costs of living among major American metropolitan areas. Property prices in the city are 25% lower than the national average.

“We have just bought an architectural masterpiece. We would not be able to afford it anywhere else,” says Elijah Wiegmann, who together with his wife Leah works at 4moms. Although the couple, both in their late 20s, used to live in Philadelphia and Ms Wiegmann is originally from New York, they are both quick to emphasise that moving to Pittsburgh does not mean settling for less in terms of culture. “We are self-proclaimed hipsters. We love places such as San Francisco and Portland, but not necessarily renting a one-bedroom flat and scrambling for money,” says Mr Wiegmann, while his wife adds that Pittsburgh gives all the benefits of living in the big city, but without being quite so overwhelming.

**Cultural revolution**

Pittsburgh has a newly revitalised cultural district, which prior to its development in the 1990s was known more for strip joints than theatres. Trendy bars can now be found in districts such as East Liberty and Shady Side, nature trails are located in close proximity to its centre and the city has a number of sport- ing venues that are home to major clubs, such as the Steelers American football club and the Penguins ice hockey team. That, together with good job prospects, has gained Pittsburgh a string of awards, including the Economist Intelligence Unit’s title of the most liveable city in the US, the top-ranked large city in FDI’s 2011/12 American Cities of the Future ranking, and National Geographic Traveller’s inclusion in its Best of the World 2012 ranking.

Such international plaudits recognise Pittsburgh’s achievements of the past few decades. Yet such laurels would count for nothing if the city’s residents did not embrace these rapid changes. “People who live here see this city every day. It is hard to step back and think about how this city

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<th>CITY PROFILE</th>
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<tr>
<td>PITTSBURGH</td>
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<td>Population (2011): 307,484</td>
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<tr>
<td>Population growth rate (2000-2010): -8.6%</td>
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<tr>
<td>Area: 143 sq km</td>
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<tr>
<td>Real GDP growth: 0.8%</td>
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<td>Labour force: 156,633</td>
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<td>Unemployment rate: 7.3%</td>
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Pittsburgh is a good place to do business and make investments.
**IN FOCUS**

**CAPTURING DESIGN IN 3D**

Students of Pittsburgh’s Robert Morris University (RMU) excel at producing busts of their patron. But they do not produce them out of reverence, but rather because they can, thanks to three-dimensional printing. The School of Engineering specialises in this technology, which uses printing in layers to produce solid objects of digital models. Observers say the technique could turn around US manufacturing, as prototypes can be developed quickly and cheaply.

“We have been working on that technology for years. What has recently changed, however, is that we can use 3D printing not only to produce objects made of plastics, but also steel and ceramics,” says Arif Sririnterlik, the school’s director of Engineering Laboratories.

And the school celebrated another triumph in August 2012, when it became the part of a winning team to create the National Additive Manufacturing Innovation Institute, a public-private research centre tasked with accelerating additive manufacturing technologies. A $70m grant was assigned to a group of five colleges, 40 companies and 11 non-profit organisations from Pennsylvania, Ohio and West Virginia. The project is seen as a step towards closer co-operation of institutions based in the area commonly called the ‘rust belt’ due to the decline of its manufacturing industry that started in 1980.

“We hope to bring back manufacturing, but in a way that, thanks to technological advancements, gives us a competitive edge,” says Jerry Paytas, vice-president of research and analytics at Fourth Economy, an economic development agency.

I moved here because the city offered a funding programme for entrepreneurs

I looked 10 or 20 years ago,” says Mr Yablonsky. Recent events have also endorsed Pittsburgh’s revival story. “In 2009 we organised a G-20 meeting and we were chosen as a host precisely because of our economic success,” says Mr Yablonsky. He adds that the event resulted in more than 7000 media stories about the history and quality of life in Pittsburgh. In 2012, the city welcomed high-profile guests again when it hosted the One Young World summit, a prestigious gathering of young leaders from around the globe. The community of future trailblazers was addressed by former US president Bill Clinton and ex-United Nations secretary-general Kofi Annan, among others.

**Bringing talent back**

Yet such an influx of the world’s brightest young minds to Pittsburgh remains something of a novelty. “When the steel industry collapsed there was an almost catastrophic outflow of young workers. There was a generation of ‘no opportunity’ in Pittsburgh,” says Mr Petzinger.

Although financial incentives since the 1980s have been attracting entrepreneurs, finding skilled workers or persuading them to move to Pittsburgh has proved to be difficult. “When I was recruiting people in the late 1980s, the standard response was ‘I do not want to move here’. Attracting talent was a challenge then,” says Mr Yablonsky, who at that time was managing Carnegie Group, a software solutions company.

To attract skilled employees to his Carnegie Group, Mr Yablonsky says that he “started a ‘boomeranger’ strategy”. The main premise of that initiative was targeting people who had links with Pittsburgh, either because it was their home town or where they went to school, and persuading them that Pittsburgh was a perfect place not only to work, but also start a family. “Eventually our company grew to total of 250 people, out of which ‘boomerangers’ constituted one-third of the total head count,” says Mr Yablonsky.

Now Mr Yablonsky applies that strategy in his role in the city’s economic development agencies and says that a lot of businesses in Pittsburgh recruit their employees by searching for ex-Pittsburghers. Mr Yablonsky himself could be described as ‘boomeranger’. Born in Pittsburgh, he worked for many years in Cincinnati, Ohio before returning.

Some of the returning residents come from even further afield and are attracted to the city not only by headhunters, but also by Pittsburgh’s welcoming atmosphere. Mila Sanina, a social media editor at Pittsburgh Post-Gazette, a local daily newspaper, moved to the city from Kazakhstan. While still a student at the University of Pittsburgh’s Graduate School of Public and International Affairs, she worked for broadcasters CNN in Atlanta and PBS in Washington, DC, but made a decision to “boomerang back” to Pittsburgh.

“I really like the city and my current employers were willing to help me with my work visa. I did not receive [this much] attention and understanding anywhere else,” says Ms Sanina, stating that Pittsburgh has become “her American home”. According to Ms Sanina, in recent years Pittsburgh residents have become enthusiastic about their city, but instead of self-praise they manifest that in a ‘can-do’ attitude. Andy Warhol, whose career was intrinsically connected with New York, never moved back to Pittsburgh. Then again, he was probably oblivious to the fact that Pittsburgh would evolve to offer such excellent job prospects in industries such as biosciences, robotics and shale gas extraction. And, at the time of his death, the Pittsburgh arts district was still awaiting its much-needed renovation.
PITTSBURGH'S FERTILE ENVIRONMENT OF SUPPORT, FUNDING AND INTELLECTUAL CAPITAL IS HELPING TECHNOLOGY START-UPS GET A FOOTHOLD IN THE WORLD OF BUSINESS. MICHAL KACZMARSKI REPORTS.

Tucked between a frozen yoghurt bar and a salon selling ‘virgin Malaysian hair’, Pittsburgh’s newest company offering co-working space for tech start-ups, Revv, seems to be located on an unlikely site. Yet, despite its surprising setting, the company has already attracted 20 start-ups in the couple of months it has been open.

So why is Pittsburgh such a hotbed for these new companies? “The vibe in Pittsburgh is great. There is something about this city that makes you collaborative and entrepreneurial,” says Jocelyn Saurini of Red Blue Voice, a firm that microfunds social campaigns, regardless of political affiliation.

Set up by Ms Saurini and her high-school friend Josh Lucas, the firm offers evidence of Pittsburgh’s collaborative environment. “Josh and I could not be more different when it comes to party allegiance, but it does not mean we cannot work together,” says Ms Saurini. “[This is] a very Pittsburgh way of thinking”.

Entrepreneurship and innovation is ‘very Pittsburgh’ too. The city has a long association with tycoons such as HJ Heinz, Andrew Carnegie and George Westinghouse. Pittsburgh is also a city of firsts: it is where the banana split and Big Mac hamburger were invented, and the city gave birth to the first US commercial radio station, baseball stadium, gas station, internet emoticon and heart, liver and kidney transplants.

Seed funding

Most of these achievements would not have been possible without a strong core of early-stage funding. To meet the needs of fledgling businesses, a regional initiative, Innovation Works, has invested more than $52.3m since its seed capital fund was established in 1999.

“On top of direct investment, we provide hands-on support and business expertise, and our staff largely consists of former entrepreneurs,” says Richard Lunak, president and CEO of Innovation Works. That strategy has paid off. Since 2000, companies supported by Innovation Works attracted more than $1bn of outside capital and in 2011 alone they generated $1.1bn in revenue.

Apart from Innovation Works, Pittsburgh boasts a string of pro-business entities, including Pittsburgh Life Sciences Greenhouse, Idea Foundry, the Technology Collaborative and Pittsburgh Technology Council. The city is also a base for 33 venture capital firms that provide funding for later-stage operations.

Despite this, “there is not enough venture capital in Pittsburgh”, according to Sean Ammirati, a partner at Birchmere Ventures and co-founder of mSpoke, a company that became LinkedIn’s first acquisition. But “a great idea will always find its way to funding”, he adds.

Whiz kid

Mr Ammirati’s words are confirmed by the story of another technology whiz, Luis von Ahn. Born in Nicaragua and based in Pittsburgh, when he was 21 Mr von Ahn
co-created Captcha, a challenge-response test, which is now used more than 200 million times daily. He then moved on to create ESP Game, an image recognition initiative and, after selling it to Google, went on to establish reCaptcha, an optical character recognition system.

Mr von Ahn admits that after Google’s acquisition of reCaptcha in 2009, he was “seriously considering retirement” at the age of 29. Then, deciding that retirement was “boring”, he instead secured $18.3m for Duolingo, his newest project that combines language learning with website translation. But settling down in Pittsburgh, Mr von Ahn shows that tech entrepreneurs can be successful without a permanent presence in Silicon Valley.

“Pittsburgh helps me to keep the right balance between work and life. I like it here,” says Mr von Ahn.

Another big advantage held by Pittsburgh, according to Mr von Ahn, is the constant flow of ideas and talent from Carnegie Mellon University (CMU), Pittsburgh’s educational powerhouse. The alma mater of both Mr von Ahn and Mr Ammirati is seen widely as a magnet for blue-chip companies. Apple, Disney and Intel all have their research offices at CMU, and Andrew Moore, director of Google operations in Pittsburgh, admits that his company would have settled elsewhere in the US had it not been for CMU.

Focus on education
CMU, together with the University of Pittsburgh, excels not only in research, but also helps students and faculties commercialise their ideas. But while CMU and the University of Pittsburgh hog the limelight, they are just a small (albeit important) part of Pittsburgh’s educational system.

The Pittsburgh region has more than 150,000 students enrolled at 34 colleges and universities. Schools such as St Vincent College and Robert Morris University conduct highly specialised research in bio-informatics and advanced manufacturing, respectively.

“One of the features of our system is that, although at times we compete with other universities, more often we collaborate with them on various projects,” says Eric J Beckman, professor of engineering and co-director at University of Pittsburgh’s Mascaro Center for Sustainable Innovation.

In that regard, Pittsburgh has stayed true to its blue-collar attitude. Its entrepreneurs remain down-to-earth and boasting about achievements is frowned upon by locals. “We even have our own term to describe someone who is bragging too much about their achievements or wealth. Such behaviour is called ‘jagging off’ over here,” says Bill Flanagan, executive vice-president of Allegheny Conference, a regional economic development agency.

Nathan Martin, CEO of DeepLocal, a marketing company that applies the newest technologies to branding campaigns, confirms that unlike Silicon Valley or New York, Pittsburgh is not a place for egomaniacs. “I used to work in San Francisco and what you see there is a huge sense of ego. In practice that means higher salaries and less loyalty to the company that developers work for,” says Mr Martin. Lower staff rotation means DeepLocal can focus on devising high-tech campaigns for clients such as EA Sports, Reebok and Toyota. In a typical Pittsburgh manner, Mr Martin talks about the names of his clients and inventions, such as the brainwave bike-shift changing system, without swagger.

Pittsburgh is relaxed. This city is easy to live, operate and innovate in,” sums up Audrey Russo, a New Yorker turned Pittsburgher and CEO of Pittsburgh Technology Council. ■
From steel to green

BUSINESSES IN PITTSBURGH ARE RISING TO THE GREEN-TECHNOLOGY CHALLENGE BY CONSTRUCTING ZERO-Impact Buildings Using Locally Sourced Materials. MICHAL KACZMARSKI REPORTS

An impressive 19th-century structure, the Phipps Conservatory and Botanical Gardens has remained unchanged since it was built some 120 years ago. Its original purpose as a green haven away from the smoky air of the ‘steel town’ of Pittsburgh still resonates, but today its main focus is on environmental awareness and sustainability. So, when Phipps decided to extend its facilities and build its Centre for Sustainable Landscapes, it was important that the new building was designed and constructed in an environmentally responsible way, in keeping with Phipps’ green principles.

To this end, Phipps’ executives accepted the Living Building Challenge, a global initiative promoting the construction of zero-impact buildings. “We are very excited about moving our administrative and research operations to the Centre for Sustainable Landscapes, which is designed as one of the greenest buildings in the world,” says Phipps’ executive director, Richard V Piacentini, while touring the nearly finished construction of the centre and pointing out its green features, such as geothermal heating and natural ventilation.

Staying local
Zero-impact buildings are required to source their construction materials from local suppliers and so Phipps’ ambitious project relied on a strong supply chain of green-tech companies. One of these companies is Epiphany Solar Water Systems, which has developed a solar panel capable of distilling water, one of the innovative green technologies being utilised by the Centre for Sustainable Landscapes.

Epiphany’s founder, Tom Joseph, says that such eco-related inventions are rapidly becoming typical of Pittsburgh. “We have a strong tradition of innovation here. That, together with a strong university system and incubators that support green-tech, definitely helps in building a supply chain.” For its part, Epiphany received seed funding in 2005 from state-funded tech incubator Innovation Works, which enabled the company to get off the ground.

Phipps is not the only green-minded organisation in Pittsburgh. In August 2012, Pittsburgh joined the 2030 Challenge, a project that encourages cities to cut their energy, water and transportation emissions by half. More than 50 businesses are directly involved in the project, including PNC, a financial services corporation that has been a pioneer of eco-friendly solutions in the local real estate market.

“We started in 2000, [when] PNC Firstside Centre was opened. At that time it was the biggest Leadership in Energy and Environmental Design (LEED)-certified building in the world,” says Gary J Saulson, executive vice-president and director of corporate real estate at PNC.

The company followed this with another project, the Three PNC Plaza, a skyscraper which attained gold LEED certification, one of the highest standards in environmental design. Currently the company is building what is being billed as the world’s greenest skyscraper – its new 40-storey headquarters – at a cost of $400m.

Similar to Phipps, PNC believes that the strength of the local supply chain plays a vital role in pursuing eco-friendly projects. “One of the premises of obtaining LEED certification is that a certain quota of materials used in a building has to come from within 500 miles [800 kilometres] of the construction site,” says Mr Saulson.

Waste water solution
Pittsburgh’s green-tech revolution has also stretched to industries that are not commonly perceived as being eco-friendly. The city sits on the Marcellus Shale, one of the largest natural gas fields in the world. Controversy surrounds the extraction of shale gas, particularly the environmental damage done by the waste waters associated with the extraction process. But in Pittsburgh, a green-minded company has come up with a solution to this problem.

A local water purification specialist, Aquatech, is developing mobile treatment solutions for water used in the extraction process, which stops the discharge of waste water into surrounding waterways.

According to Chuck Kozdra, Aquatech’s regional business development manager, it is not by chance that his company is located in the Pittsburgh area. “Over here, people take pride in what they do and are increasingly environmentally aware. That certainly helps in the way we operate,” he says.