

Closure of the Kodak plant in Rochester, United States

Lessons from industrial transitions



SEI brief

June 2021

Aaron Atteridge

Claudia Strambo

Key insights:

- Rochester went through a decades-long process of industrial transition as the Eastman Kodak Company, a photography technology company, cut more than 80% of its jobs from its height in the 1980s to its bankruptcy in 2012.
- Rochester emerged from the transition with a more diverse economy, and with higher levels of employment. Key to this positive outcome was the city's use of the existing infrastructure and skill set to reorient the regional economy and enable the development of new tech companies.
- Universities and major cultural institutions supported the transition by attracting research funding and companies seeking high-skilled workers, and by collaborating with the private sector to develop training programs that matched the skills companies needed.
- Even as the economy has grown, however, the city centre has suffered from population loss and urban decay. Acute inequalities remain: new employment opportunities mainly benefitted high-skill workers, and the quality of jobs, in terms of wages and security, has decreased.
- In an industrial transition, it is important to implement measures to specifically address poverty and marginalization, and to ensure broader economic diversification, as well as use a broad set of indicators when assessing the effectiveness of transition policies.

This case study examines the decline and ultimately closure of the Kodak plant in **Rochester, New York, United States**. It is part of a series that looks at four historical cases involving the decline of major industrial or mining activities. In each, we describe the reasons for the decline and explore how various actors address (or did not address) the social, economic and environmental consequences.

The aim of the series is to share lessons that might guide ongoing and future transitions, particularly those related to the decarbonization of regional economies. Countries and regions that today are heavily dependent on carbon-intensive industries and/or fossil fuel extraction face the prospect of disruptive social and economic changes as the global decarbonization agenda gathers momentum. Sharing knowledge from past experiences might help these communities appreciate the dynamics of transition, and ultimately to prepare for and manage these transitions as smoothly as possible, to ensure fair outcomes while reducing any resistance that might slow down necessary change.

Other briefs in this series look at the cases of the closure of a major steelworks plant in Newcastle, Australia, the decades-long decline of the United Kingdom's steel industry, and the collapse of the Free State goldfields in South Africa. Some overall insights from the cases can be found in a [synthesis brief](#).

IMAGE (ABOVE): Kodak Tower, Rochester, US
© THOMAS BELKNAP / WIKIMEDIA
[Creative Commons Attribution-Share Alike](#)
2.0 Generic

Background

In the 1880s, the Eastman Kodak Company, a pioneering American photography technology company, began operations in Rochester, New York. Nearly a century later, at its peak in the late 1970s and early 1980s, Kodak produced around 90% of the film used in the United States (Stelfox, 2014). A vertically integrated company, Kodak made all its wares, “from the gelatine in the film to the tiny screws in each camera”, in Rochester (Ryssdal, 2016).

Rochester also became home to several other major companies, notably Xerox (initially a photographic paper manufacturer) and Bausch & Lomb (optics and medical ophthalmology). Together, these corporations created a demand for skilled workers, such as engineers, and at their peak directly employed roughly 20% (Dudley, 2015) – or by some estimates as much as 60% (Applebome, 2012) – of Rochester’s workforce, as well as provided indirect economic activity and employment. In 1982, Kodak alone employed around 62,000 people (Dickinson, 2017; Knispel, 2019) and accounted for half of the area’s economic activity (Knispel, 2019).

From the 1980s onwards, Kodak went into sustained decline over a period of several decades. A prevailing narrative suggests that the causes stemmed from a combination of poor strategic choices by the company, and increased global competition (Dudley, 2015). Even though Kodak invented digital photography, the company refused to reorient its business towards this new technology and stuck with the old film-based business model. Though Kodak had analysis about likely market changes on the horizon, it either deliberately did not or financially could not react quickly enough (DiSalvo, 2011; Mui, 2012). The Japanese company, Fujifilm, successfully undercut Kodak prices. Meanwhile, Kodak made bad investments in other enterprises (chemicals and batteries) outside of their core business (Mui, 2012). Some have suggested that poor strategic decisions were compounded by the fact that the company was not properly accounting for the significant environmental and health impacts it was generating. If “off balance sheet” externalities had been treated as costs, this may have motivated the company to shift away from chemical film production and towards digital much earlier (Maxwell & Miller, 2018).

By the turn of the millennium, Kodak had cut more than 80% of its workforce from a peak of over 60,000 jobs; cuts continued well into the 2000s (Owens, 2018). Between 2000 and 2010, the number of manufacturing jobs in Rochester declined by over 40%, which was “on top of the previous significant decline in manufacturing that the region experienced throughout the 1980s and 1990s” (Dudley, 2015).

Kodak filed for bankruptcy protection in January 2012. By the time the company emerged from bankruptcy 19 months later, it employed 2,300 people in the Rochester area. By the end of 2016, this had fallen further to around 1,600 (Dickinson, 2017).

Impacts and response: a tale of two cities

Several decades of slow but major decline in employment by the city’s three major corporations – Kodak, as well as Xerox and Bausch & Lomb – continues to reverberate in Rochester (Dickinson, 2017). However, sources paint various, and sometimes conflicting, pictures of Rochester’s present and future outlook. In the wake of Kodak’s decline, two main narratives prevail: Rochester is either a vibrant hub of new manufacturing firms or a city struggling to emerge from decades of slow decline. Each narrative explains a partial view of the city’s state.

One narrative insists that the city has diversified and reinvented itself. In this view, new entrepreneurs – many of whom worked previously as skilled employees for Kodak or the other major corporations – are spawning new enterprises, taking advantage of the infrastructure created by Kodak, and employing many former Kodak workers. The other narrative characterizes Rochester as struggling to create jobs and economic stability for many of its inhabitants, despite some new economic activity; in this view, the city faces growing inequality, decaying infrastructure (especially in the city centre), and persistently high poverty rates.

Narrative 1: Rochester reinvented

Despite the loss of tens of thousands of Kodak jobs, total employment in the Rochester metropolitan area rose from 414,000 in the 1980s to around 520,000 jobs by 2013, and the population of the wider area grew during this time from 970,000 to about 1.1 million (Deaux & Gara, 2013; Moore, 2012).

In some quarters, there is a buzz around the entrepreneurial activity that emerged, particularly in tech sectors and by skilled segments of the former Kodak workforce (Mattioli 2011). Kodak spawned dozens of firms built on its technologies (Seward, 2012).

The Rochester economy is today more economically diverse. The employment base in the region includes health care, education, and consumer and business services, as well as food, computers and electronics sectors. These contemporary manufacturing companies are leaner, and employ an even higher-skilled workforce than in the past (Dudley, 2015).

There is a view that “Rochester’s start-ups may occupy a niche in manufacturing and technology markets that can sustain skilled workers” (Deaux & Gara, 2013). The city has been branded with optimistic labels: one of the “smartest cities in America,” one of the nation’s “most innovative cities”, and one of 10 cities “poised for greatness” (Seward, 2012), with a robust economy (Applebome, 2012), that positions it to become “a next-generation technology hub” (Knispel, 2019).



Rochester skyline © ROLAND SHAINIDZE PHOTOGRAPHY / GETTY

Education and health sectors seem to have been more critical to growth in new jobs than manufacturing. These sectors, which grew by more than 40% between 2000 and 2015, “tend to be less susceptible to cyclical downturns than other parts of the economy, which helps make the region more stable” (Dudley, 2015). Other non-manufacturing sectors experiencing growth include business services, leisure, hospitality, and construction (Dudley, 2015).

“These industries create the spine of a city that today employs more workers and has a larger population than it did at the height of Kodak’s power. And it’s why... the president of the non-profit High Tech Rochester calls Kodak’s bankruptcy a ‘non-event’ to most Rochestarians” (Deaux & Gara, 2013).

The process of reinvention and economic diversification, in part, allowed the region to better weather the transition and the nationwide Great Recession that resulted from the global financial crisis.

“For Rochester, the downturn was both shorter and less severe in terms of job loss than for the nation as a whole...the Rochester area has continued to grow at a solid pace through the recovery. This is no small feat, and it certainly is not true for all of Upstate New York” (Dudley, 2015).

What interventions helped to spur this activity?

The literature we reviewed included little critical reflection on any of the policies, incentives or other interventions that may have helped to generate this wave of entrepreneurial activity in the wake of Kodak’s demise.

Some observers say Rochester has an economic resilience that they attribute to a network of private and not-for-profit partnerships aimed specifically at diversifying the city’s economy. Organizations such as High Tech Rochester and Greater Rochester Enterprise have worked “with government and the research and education sector to train entrepreneurs, support innovation and research and ‘incubate’ new business ventures” (Moore, 2012). The growth in new tech industries has contributed, at least partly, to a demographic shift: the city has seen a growing “millennial” population, even as its overall population declined. This, in turn, has catalysed some urban regeneration – new residential development and other renovation projects have helped to regenerate some of the city’s core (Owens, 2018).

State and federal governments contributed grants for some initiatives. In 2006, the Rochester region received a four-year grant from the US Department of Labor to finance economic development initiatives; this led to the New York Governor’s Regional Economic Development Council awarding around \$70 million in projects in 2011 (Moore, 2012).

The city has used the repurposing of Kodak’s old industrial infrastructure to attract business, by lowering costs for new firms that can make productive use of some of the existing stock (Overgaard & Utley, 2013). Several commentators suggest that Kodak’s technical infrastructure has been a boon for the city’s efforts to revitalize its economic base. New tech firms in Rochester can take advantage of the industrial infrastructure that Kodak left behind, including factories, a power plant, a water treatment system and waste facilities, and a private railroad (Ryssdal, 2016). An estimated 50 buildings situated on 1,200 acres of land, repurposed as the Eastman Business Park, attracts new manufacturing and commercial tenants. By 2012, half of the site’s 6,200 employees still worked for Kodak, but half worked for 35 other companies – many of which were spin-offs from Kodak itself. By 2013, the site included an estimated 45 companies employing at least 4,500 workers outside Kodak itself (Applebome, 2012; Deaux & Gara, 2013).

Major institutions have contributed to maintaining and supporting the city's civic life. The presence of research and higher education institutions, including two major research universities, seems to have provided an important foundation for attracting new businesses looking for skilled workers (Overgaard & Utley, 2013). The universities have also worked with various industries to design training courses that match specific industry needs (Dudley, 2015). They are also the city's largest employers (Applebome, 2012; Knispel, 2019). The universities have attracted billions in federal government research funding that has indirectly benefited the regional economy initiative (Moore, 2012). Civic life benefits from the city's National Centre for Arts Research, the Rochester Philharmonic, and the International Museum of Photography, as well as from new trends such as the vibrant craft beer scene (Moore, 2012). Philanthropic support from Kodak's founders has benefited the University of Rochester and its Eastman School of Music, along with the city's hospitals (Applebome, 2012).

Narrative 2: Rochester suffering long-term recession and growing inequality

The other narrative argues that the city remains highly unequal and struggles to create employment opportunities for its lower-skilled citizens. This has led to urban decay and has also influenced the city's political landscape.

Employment statistics indicate that over the last decade, Rochester's unemployment rate has not been greatly different from the national average in the US. Unemployment levels fell from as much as 9% in 2010 to 4.6% in 2017, a figure only slightly above the national average. The benefits of increasing employment have, however, not been evenly distributed within the community. Re-employment opportunities have been concentrated among skilled workers, while unemployment levels remain high among lesser-skilled people within the working-age population (Mattioli, 2011; Owens, 2018).

Furthermore, despite falling unemployment, remuneration levels and job security have fallen (Applebome, 2012; Owens, 2018). Wage decline in Rochester has been a long-term trend; in the 1980s, wage levels were above state and national averages, but by 2010, they had fallen below both (Mattioli, 2011), mirroring the "dwindling of well-paying factory jobs" (Applebome, 2012). A 2018 review of the strength of job markets across all US metropolitan areas (with populations of more than 1 million) ranked Rochester as the worst performing area. The review looked at average unemployment rates, labour-force participation rates, and changes in average weekly wages over 2018 (Armbruster, 2019).

Even among those employed, there are considerable disparities in income by ethnicity and gender. A report by the Rochester-Monroe Anti-Poverty Initiative (Doucette & Fitts, 2017) found that low wages have particularly hurt women, minorities and the disabled population. Many people with jobs are still living below the poverty line, especially those with part-time and seasonal jobs. The (mainly service) industries in which minority groups are over-represented tend to be the largest and lowest-paying sectors in the county. And, in nearly every industry, minorities earn less than their white counterparts, regardless of education levels (Doucette & Fitts, 2017).

Consequently, the gap between rich and poor has been steadily increasing. Inner-city schools suffer economic downturn the most, and graduation rates from the city school district (a low 46%) have fallen well below the state average for New York (Feltner, 2017), and are among the lowest in the country (Ryssdal, 2016). US Census data from 2015 ranked Rochester as the country's fourth poorest city. Among the 110,000 people living at or below the poverty line in Rochester, almost a third are employed (Doucette & Fitts, 2017).



High Falls area, Rochester © STANROHRER / GETTY

These inequalities in employment and wages have created a divide in the city, and wider negative social impacts. The city population has declined and its demographics have changed from a predominantly white population in the 1950s to a more mixed citizenry today (44% white and 42% black) (Ryssdal, 2016). The downtown area – home of many of the less-skilled people who worked on the factory floor at the Kodak plant – suffered decay, with a plethora of abandoned shopping centres and vacant buildings in various states of disrepair (Applebome, 2012; Mattioli, 2011). Poverty – and the social problems associated with it – is concentrated around these central areas (Owens, 2018; Ryssdal, 2016).

Kodak's demise left behind serious environmental legacies, in the form of costs and risks that shifted to the

city and its residents. While Kodak was operating at relatively full production, there were already concerns surfacing in the city about the facility's release of toxic waste into groundwater and the air; tests revealed the presence of dangerous contaminants including methylene chloride, acetone, methanol, and dioxin. From the mid-1980s to 2000, "the company had spewed more toxic emissions into the environment than any other corporation in the state of New York" (Maxwell & Miller, 2018). In 1990 the company admitted violations of anti-pollution laws (Hanley, 1990), and by 1998, Rochester residents had filed a US\$185-million lawsuit against Kodak for its chemical contamination.

Despite the lawsuit, the closure and transition process essentially transferred some of the costs of cleaning up decades of contamination to the public. According to provisions of a settlement with the US government, clean-up costs of the site and adjacent Genesee River were to be shared, with Kodak paying the first \$49 million, the state paying up to an additional \$49 million, and any costs beyond shared equally between the company and the state (U.S. Department of Justice, 2014).

City initiatives to tackle poverty and attract business

In 2014, two years after Kodak declared bankruptcy, Rochester elected the city's first female mayor, Lovely Warren, who was also the youngest person and only the second African-American person in the city's history to hold the position.

Since Kodak's closure, the mayor's office has led various initiatives targeting the poverty gap and the creation of new businesses and employment. These include loan programmes for small businesses, and the establishment of a non-profit enterprise that supports worker cooperatives. Another initiative, Operation Transform Rochester, focuses on workforce development, job readiness and mentorship services for young people. An example of their work is partnering "with the local school district to implement a job training program that prepares students for public safety careers like emergency medical services, law enforcement and firefighting" (Owens, 2018). The city also established an Office of Innovation and Strategic Initiatives to find data-driven solutions to poverty (Owens, 2018), and works in partnership with the Rochester-Monroe Anti-Poverty Initiative (RMAPI) to understand the drivers of poverty in distressed neighbourhoods. The RMAPI

is a community collaboration and has sought to align efforts by the public and non-profit sectors so that resources might be used most effectively and coherently (Owens, 2018).

Accounts suggest that progress has been slow, but that trends are headed in a positive direction: by 2018, Rochester appeared to be “in the early stages of recovery” (Owens, 2018). The US Census Bureau estimates that between 2014 and 2016, poverty in Rochester declined by roughly 1%; almost one-third of the city’s residents were living in poverty at that time (Owens, 2018). Also by 2016, overall crime had declined, and certain sectors of the economy were starting to rebound.

Conclusion

Rochester went through a decades-long process of industrial transition that ultimately resulted in a more diverse economy, with higher levels of employment and population in the greater Rochester area. Key to this positive outcome was the reorientation of the regional economy, built upon an existing infrastructure and skill set; this enabled the development of new tech companies. The Rochester case also shows the great potential of universities in supporting industrial transitions, by attracting research funding and companies seeking high-skilled workers, and by collaborating with the private sector to develop training programs that match the skills companies need.

Nevertheless, concentrating on job creation and economic diversification in the Rochester area does not provide a full picture of industrial decline consequences. Focusing on the city area (as opposed to the greater Rochester area) shows population loss and urban decay. A more detailed analysis also reveals that new employment opportunities have mainly benefitted high-skill workers, that acute inequalities remain, and that the quality of jobs, in terms of wage and security, has decreased. This more nuanced picture shows the importance of implementing measures to specifically address poverty and marginalization, together with broader economic diversification efforts. It also highlights the need for a broad set of indicators when assessing the effectiveness of transition policies.

References

- Applebome, P. (2012, January 16). Despite Long Slide by Kodak, Company Town Avoids Decay. *New York Times*. <https://www.nytimes.com/2012/01/17/nyregion/despite-long-slide-by-kodak-rochester-avoids-decay.html>
- Armbruster, M. (2019, March 6). Rochester ranks worst for labor market vitality. *Rochester Beacon*. <https://rochesterbeacon.com/2019/03/06/rochester-ranks-worst-for-labor-market-vitality/>
- Deaux, J., & Gara, A. (2013, August 2). Rochester’s Rise Amid Kodak’s Demise. *The Street*. <https://www.thestreet.com/story/11997493/1/rochesters-rise-amid-kodaks-demise.html>
- Dickinson, M. (2017, September 13). Kodak’s decades of decline. *Rochester Business Journal*. <https://rbj.net/2017/09/13/kodaks-decades-of-decline/>
- DiSalvo, D. (2011, October 2). The Fall of Kodak: A Tale of Disruptive Technology and Bad Business. *Forbes*. <https://www.forbes.com/sites/daviddisalvo/2011/10/02/what-i-saw-as-kodak-crumbled/#38d1d6507df1>
- Doucette, L. A., & Fitts, H. (2017). Wage disparities in Monroe County by race and gender. Mayor’s Office of Innovation and Strategic Initiatives. <http://www.cityofrochester.gov/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589972584&libID=8589972565>

**Published by**

Stockholm Environment Institute
Linnégatan 87D, Box 24218
104 51 Stockholm, Sweden
Tel: +46 8 30 80 44

Author contact

claudia.strambo@sei.org

Media contact

emily.yehle@sei.org

Visit us: sei.org

Twitter: [@SEIresearch](https://twitter.com/SEIresearch)
[@SEIclimate](https://twitter.com/SEIclimate)

Stockholm Environment Institute is an international non-profit research and policy organization that tackles environment and development challenges. We connect science and decision-making to develop solutions for a sustainable future for all.

Our approach is highly collaborative: stakeholder involvement is at the heart of our efforts to build capacity, strengthen institutions, and equip partners for the long term.

Our work spans climate, water, air, and land-use issues, and integrates evidence and perspectives on governance, the economy, gender and human health.

Across our eight centres in Europe, Asia, Africa and the Americas, we engage with policy processes, development action and business practice throughout the world.

- Dudley, W. (2015). Workforce Development and Reinvention in the Rochester Economy. Remarks before the Rochester Business Alliance, Rochester. <https://www.newyorkfed.org/newsevents/speeches/2015/dud150812>
- Feltner, K. (2017, August 4). Wage disparity detailed. Rochester Business Journal. <https://rbj.net/2017/08/04/wage-disparity-detailed/>
- Hanley, R. (1990, April 6). Eastman Kodak Admits Violations of Anti-Pollution Laws. New York Times. <https://www.nytimes.com/1990/04/06/nyregion/eastman-kodak-admits-violations-of-anti-pollution-laws.html>
- Knispel, S. (2019). Rochester can become US growth engine, says MIT economist. University of Rochester. <https://www.rochester.edu/newscenter/rochester-can-become-us-growth-engine-says-mit-economist-jonathan-gruber-373062/>
- Mattioli, D. (2011, December 24). As Kodak Fades, Rochester Develops Other Businesses. Wall Street Journal. <https://www.wsj.com/articles/SB10001424052970204336104577092313580006528>
- Maxwell, R., & Miller, T. (2018, April). The Environmental Ruin of Eastman Kodak. Psychology Today. <https://www.psychologytoday.com/us/blog/greening-the-media/201804/the-environmental-ruin-eastman-kodak>
- Moore, D. (2012, February 2). No Rust in Rochester. New York Times. <https://www.nytimes.com/2012/02/03/opinion/rochesters-survival-lessons.html?mtrref=undefined&gwh=BCA2C9CDA59B2C0655A5937403276239&gwt=pay&assetType=REGIWALL>
- Mui, C. (2012, January 18). How Kodak Failed. Forbes. <https://www.forbes.com/sites/chunkamui/2012/01/18/how-kodak-failed/>
- Overgaard, S., & Utley, G. (2013, August 22). New York in the World: The home of Kodak tries to reinvent itself. In Morning Edition. WRVO. <https://www.wrvo.org/post/new-york-world-home-kodak-tries-reinvent-itself>
- Owens, C. (2018, January 15). Can the City of Kodak and Xerox Rebuild Its Workforce for the Digital Age? Next City. <https://nextcity.org/features/view/can-the-city-of-kodak-and-xerox-rebuild-its-workforce-for-the-digital-age>
- Ryssdal, K. (2016). Rochester looks to rebuild from the rubble. Marketplace. <http://longform.marketplace.org/can-manufacturing-save-america>
- Seward, Z. (2012, January 20). Rochester after Kodak. Innovation Trail. <https://www.innovationtrail.org/post/rochester-after-kodak>
- Stelfox, D. (2014, June 25). Last days of Kodak town: The decline and fall of the city photography built. The Guardian. <https://www.theguardian.com/artanddesign/2014/jun/25/kodaks-town-decline-and-fall-of-city-photography-built>
- U.S. Department of Justice. (2014). Manhattan U.S. attorney and EPA announce agreement with Eastman Kodak Company for clean up of Rochester, New York, Business Park and the Genesee River. <https://www.justice.gov/usao-sdny/pr/manhattan-us-attorney-and-epa-announce-agreement-eastman-kodak-company-clean-rochester>
-