

CASE STUDY

YOKOHAMA REINVENTING THE FUTURE OF A CITY

COMPETITIVE CITIES KNOWLEDGE BASE
TOKYO DEVELOPMENT LEARNING CENTER

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About Tokyo Development Learning Center (TDLC)

The Tokyo Development Learning Center (TDLC) program is a partnership of Japan and the World Bank. TDLC supports and facilitates strategic WBG and client country collaboration with select Japanese cities, agencies and partners for joint research, knowledge exchange, capacity building and other activities that develop opportunities to link Japanese and global expertise with specific project-level engagements in developing countries to maximize development impact.

BACKGROUND AND ACKNOWLEDGEMENTS

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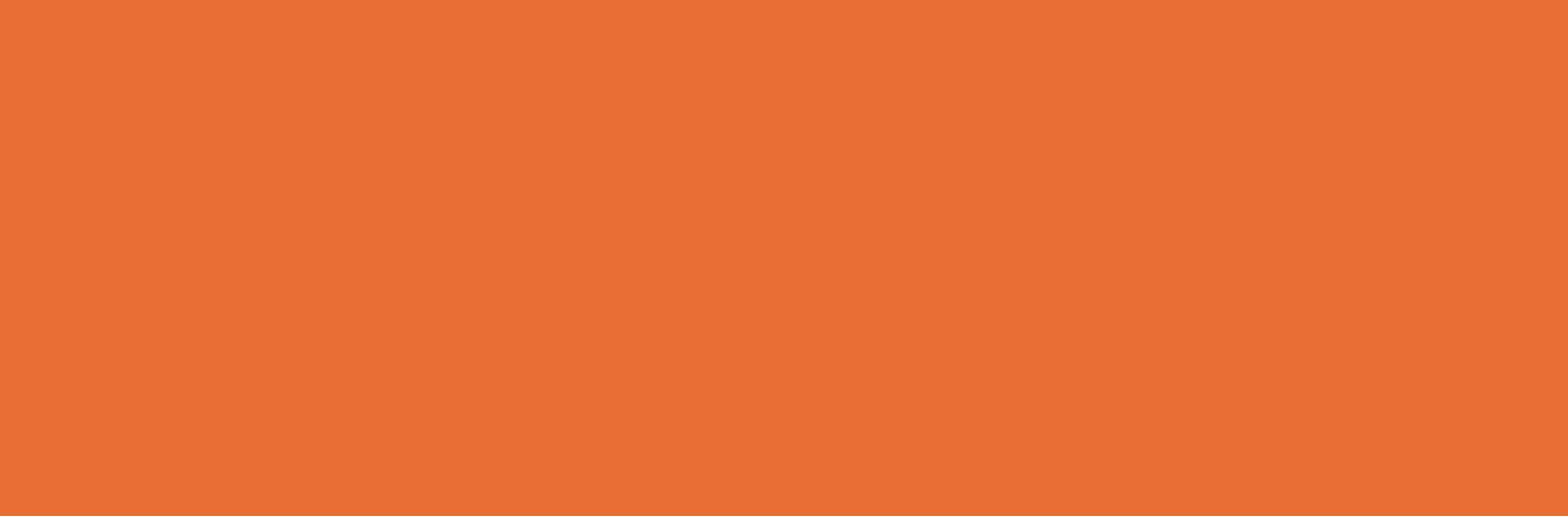


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INTRODUCTION

Yokohama is the second largest and one of the youngest of Japan's big cities.¹ One of Japan's first open ports, it was founded in the last years of the Shogunate (1859) as a concession to the European powers: close to the largest city and heart of power in Tokyo (then Edo), but not in that city itself. Since then its fate has been intertwined with Tokyo, even as it evolved its own identity. Japan's railway network began with the Tokyo-Yokohama line, financed by the only foreign loan taken out by the Meiji government. From the late 19th century through the 1930s, Yokohama grew into Japan's largest port. Along with Kobe, it became a center of shipbuilding and heavy industry, as well as one of the first cities in Japan to invest in modern public goods, such as gas-lit street lights and suburban railways.

Much of this development was led by consortiums of early, dominant industrialists and financiers. The Keihin industrial corridor, a strip of land to the north of the harbor and adjoining Kawasaki city, was built by a famous industrialist — “the cement king of the Meiji era” — Soichiro Asano (Figure 1). It was funded by the apex bank of a “zaibatsu”, the consortiums that dominated Japan pre-War. That bank, along with interpersonal networks, solved the coordination issues of having enough other investors ready to build factories on the land. By the 1920s, the Keihin strip was a cluster of what were then frontier technology companies, in automobile production, chemicals and machinery. Its role in Japan's opening to foreign trade had furnished the city with a range of service industries, such as foreign exchange, trade credit and insurance brokers. The city witnessed frequent social and political turbulence, including riots after the Russo-Japanese War and during the post-World War I depression, as well as natural catastrophe with the great earthquake of 1923.

During the Second World War, Yokohama and its naval industries were the target of intense Allied bombing. During the post-War occupation, over half of the city was requisitioned. A significant allied presence remained into the late 1950s, many years longer than other Japanese cities. As one gain from this period, the Allied occupation decentralized

1 “Second largest” including Tokyo. In Japan's administrative categories, Tokyo is technically a prefecture rather than a city, which would make Yokohama the largest “city”.

the administration of Japan's ports, placing Yokohama's port authority under the city's control. During the late 1940s and 1950s, Yokohama rebuilt and its economy recovered, and around 1960 it was the scene of exceptional political turbulence. In response to these years of disruption Prime Minister Ikeda declared the then-unprecedented goal of “doubling national income in a decade”, and it is said that the people were “looking for a new vision of politics”. Steadily, the port and industry regained their footing, not to say dominance, the rampant growth of Tokyo spilled over into residential development in the north of Yokohama, and with those came pollution, sprawl and congestion.

Figure 1. The original Keihin reclamation area developed in the early 1900s



Source: Exhibits from Yokohama Port Museum

The city's subsequent story might have been foreordained. Encumbered by vested interests, swamped by a nearby megacity, constrained by national policy and democratic politics, it might have become, at best, a residential satellite of Tokyo, and, at worst, an industrial wasteland on the edge of the capital. Such stories are common, across the developed and developing world. Sometimes those stories are punctuated by mayors with some vision of rejuvenation, who serves a term

or two, runs into difficulty and opposition, and whose plans are overturned in the next administration. Such cases reinforce a type of folk wisdom, that constraints are immutable, politics are a barrier, and what is needed is a species of hard-charging technocratic leadership liberated from reality and able to impose a top-down vision. In its absence, the best that is possible is a compromised incrementalism.

What occurred in Yokohama is quite different. From the 1960s onwards, at first through the effort of remarkable leaders and the public support and energy they marshalled, then through the routines and practices they embedded in the administration, the city transformed itself. The port and heavy industry were removed from the physical and economic center of the city and the flood of residential development was not halted but channeled. The city absorbed a massive increase in its population, and repeated waves of technological change and economic restructuring. The city has changed from a somewhat exotic port city to a place reputed to have a higher quality of life than Tokyo itself. Though tightly interwoven with the wider metropolitan economy, it has a distinct economic structure, one that has increasingly shifted into frontier research and development.

That trajectory has not always been smooth. In the 1980s, the plan for replacing former shipyards downtown — the Minato Mirai 21 precinct — expanded massively in scale and scope. When at last ready for occupation in the 1990s, just as Japan's bubble was bursting, this “new city”-type project was unable to attract its forecasted number of tenants for some two decades, despite a prime location. Today, after subsidies have attracted some Japanese headquarters of multinational corporations and R&D centers, it is home to almost a hundred thousand jobs. Another part of the city, Shin-Yokohama, around the city's shinkansen (bullet train) station, received far less attention, but from the mid-1980s onwards boomed, even as the national economy slumped into the lost decade. Today it is home to a semiconductor design and distribution cluster, although it has to some extent stagnated in the last five years.

In common with the rest of Japan, the city faces a demographic crisis as its population ages rapidly. Almost 30% of its residents will be over 65 by 2030. Along with the fiscal burdens this will impose, it poses a risk to the economy. The founders or owners of the thousands of SMEs that are its backbone will retire, and many are said to be without succession plans. If it is to harness its considerable strengths to meet its looming crisis, the city will need to catalyze the sense of internal autonomy, self-determination, and ability to turn threats into the strengths of the future that marked its most remarkable decades.

TRANSFORMING THE CITY: 1963-1978

Mayor Asukata and Mr Tamura

Hyper-growth, deteriorating environment, technological threat. In 1963, Yokohama was a city of 1.5 million people. It was experiencing hyper-growth, its population growing by 100,000 people every year. The concentration of heavy industry in the Keihin area generated worsening air pollution, and the rapid, unregulated growth created a flood-prone built environment. Within the broader Tokyo metropolitan region, or Kanto region, the city was at risk of becoming an amalgam of a marginalized commuter town, polluted center of heavy industry, and port in danger of obsolescence. That last danger resulted from the looming technological shift of shipping away from bulk handling to containerization. That would in time benefit the city's other industries, by lowering shipping costs, but in the interim it threatened one of the largest sources of employment in a city with a mushrooming population.

A thin “mayor’s wedge”. Then, and still now, Japanese cities are said to operate under a “70/30” constraint — that 70% of decisions are made, or funding allocated, by higher levels of government, and only 30% by the city itself. In Yokohama, the constraints were particularly acute: Most of the national members of parliament were allied with the port and industry, as, more generally, was the dominant national party, the Liberal Democratic Party (LDP). The city assembly, likewise, was dominated by members with strong ties to the same industries. In this period of Japan's development, the largest real estate developers were private railway companies, which were busily developing the suburban sprawl, and unsurprisingly had significant sway. The one area where the city had unusual autonomy was the port. A decision by the Allied occupation authority in the post-War years had removed port regulation from the national sphere and decentralized it to multiple, independent, city-level authorities, in theory amenable to municipal influence if not action.

A new, radical mayor. In 1963, the city elected a new mayor, Ichio Asukata. Mr Asukata was a prominent member of the Japan Socialist Party, opponents of the LDP, and had been a prominent opponent of the US-Japan Security Alliance, a core priority of the national government. Asukata's campaign centered on establishing the city's autonomy

through the collective action of its citizens — a vision of politics as massive citizen engagement in a city that would choose its own destiny. He promised to hold a “10 000 citizen convention”, to establish municipal autonomy, and to build a city focused on its citizens' quality of life. Accounts of Asukata's campaign indicate that he did not enter office with his plan already pre-determined, with a slate of projects or policies that would be imposed on the city, but emphasized the three pillars of deep participation, city autonomy, and quality of life for ordinary people.

An eclectic, unique urban planner. Once elected, Asukata commissioned Takashi Asada, an eminent advisor of national and local governments in the post-War decades, to produce a plan for the city's future. Asada in turn placed Mr. Akira Tamura in charge of the project. Tamura's background was eclectic but combined a range of fields related to his task — he received three separate Bachelor's degrees from the University of Tokyo, in law, in politics and in architecture; he worked for several national ministries (some while studying); and then he joined a real estate and finance company.² He was described as a man of wide-ranging curiosity, severity with his team members, and a deep commitment to urban planning as community building.

“Only bad futures” leads to vision of reform. The exercise that Tamura's team carried out was devoid of false optimism. He is said to have remarked that he had considered all the possible futures for the city on its then path, and “all were bad”. Over two years, from 1963 to 1965, he defined six critical projects by absorbing several ideas existing in the previous urban plans to “generate the mighty energy to build the ‘skeleton and organs’ of the city”.³ At the end, he presented a radical plan for how the city could transform itself, centered on the “six big projects” described below — believing that a conventional long-term plan would not be sufficient for the city's challenge. Mayor Asukata, who had “won him over”,⁴ then asked him to join the city and help him execute the plan in 1968. Tamura accepted, and the two would then work together for the next 12 years, holding a common vision that citizen participation should be at the core of public policy-making.

² (Tamura, 1983)

³ (Tamura, 1983)

⁴ (Dimmer, 2012)

The Six Big Projects

Technological threat turned into an opportunity.

Tamura saw that the city could only be sustained and transformed if the port relocated, and hence became less central to the city, economically and physically. At the time, the port separated the old center of town — known as Kannai — from the new center around the Yokohama railway station, which had developed post-War while Kannai was under occupation (Figure 2). If the port relocated, the city center could be knitted together into a dense area of services and culture, and the residential suburbs integrated. The advent of containers, which would involve larger ships and require new equipment to handle, provided the opportunity to make this move. The new equipment and infrastructure could simply be built away from the port's old location. At the same time, if the city were to bridge the bay, the industrial area could be linked to the new port location without trucks needing to cross the city center, reducing a source of chronic congestion. Combined with inducing some heavy industry to move southwards, the development of a dense transport network, and regularization of residential development, the port and industry could continue to grow dynamically, quarantined from but still connected to a northern area of suburban development and an inner core of commerce and services.

An integrated program made tangible in six projects.

The resulting plan centered on the “Six Big Projects”, which remain famous in the city today. Those projects were (Figure 3):

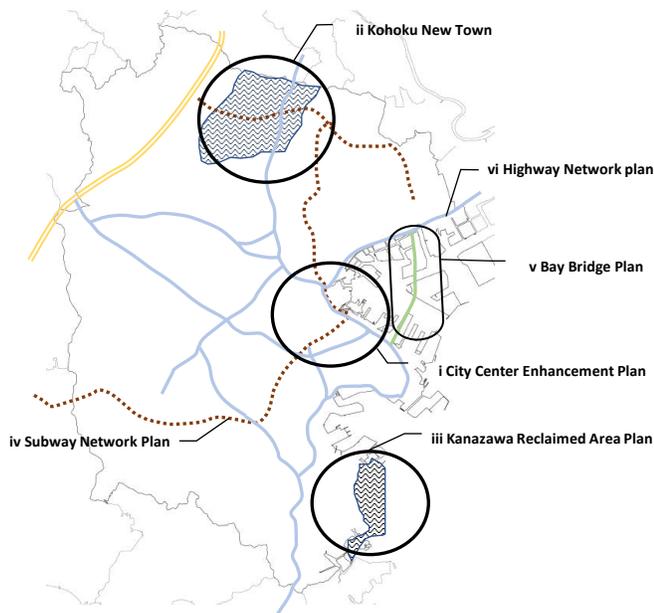
- i. Downtown transformation: Relocating the port, shipyards and small-scale industry, and creating a center for commercial and cultural activities as an economic driver for the city.
- ii. Kohoku New Town: Providing affordable housing to absorb rapid population growth, creating a well-served living environment for residents well connected to the city center.
- iii. Kanazawa reclamation: Creating an industrial zone with a healthy environment for workers, residents and visitors, supported by accessibility to city center through public transport.
- iv. Subway system: Relocating inefficient tram lines and connecting the city centers and suburbs by a robust public transport network, in particular between residential and commercial/ business areas.
- v. Bay bridge: Helping segregate logistics traffic for goods transport, and serving as a monumental icon for the waterfront area.
- vi. Expressway: Forming a trunk road network as the backbone of the city, segregating intra-city traffic and inter-city traffic to ensure efficiency and safety.

Figure 2. Kannai, Yokohama Railway Station, and Port Facility/Shipyards in 1961



Source: Edited by authors with an image from Geospatial Information Authority of Japan

Figure 3. Location Map of the Six Big Projects



Source: Produced by author based on the map of Creating City of Yokohama, January 1983

Selection that drew on prior effort and existing plans. The projects were not newly conceived by Asukata and Tamura, but had been discussed in the city, by officials and by various constituencies, alongside many other projects. For example, the port had long sought the development of a new highway system, while the port and industry had wanted the bay bridge built. Instead of inventing from new cloth, the two leaders used the substantive vision of a transformed city to select, integrate and motivate the six projects.

Selection biased towards building coalitions and changing culture. In addition to fit with the overall vision, at least two other criteria were used. One was that at least one significant member of the constituency for a project had to be powerful and lie outside the city administration itself, so that if the administration changed, the projects' constituents would have good odds of maintaining priority. As noted above, both the highway and bridge projects could draw in the port and industry, while the real estate developers and citizens' groups were strongly attached to the residential developments and the subway. A second criteria was that the projects had to require multi-bureau cooperation within the city government, at least until they were mature, both to justify their being coordinated from a central point (see below) and to create multiple advocates among officials. This latter, for example, was used to exclude a large expansion in wastewater systems from the final list of six, since it was considered wholly within the competence of its bureau.

Changing organizational behavior. Overall, the plan and selection tried encapsulated three principles of changing organizational behavior through planning, as conceived and articulated by Tamura:

1. *“Creative government for citizens”*: creating a strategic sustainable urban vision focused on citizens and with “strategic characteristics”
2. *“Atypical liquidity”*: Transcending vertically segmented ideas through the introduction of previously unusual, whole-city and comprehensive ideas
3. *“Big table principle”*: Utilizing projects that required a comprehensive coordination function, information sharing and development of human resources

Project financing was marshaled from multiple sources. When the projects were announced, it was known that they were beyond the financial reach of the city. Asukata and Tamura were, however, confident that the funds could be found with sufficient coalition building, resourcefulness in finding other sources of financing, and citizen backing. This meant that not all the projects could be started at once, but in time each was fully funded. For example, the port and industry were persuaded to use their influence with the national government, through the members of the Diet (Parliament) allied to them, to obtain national appropriations for the highway system, via the Japan Highway Public Corporation.⁵ Kohoku New Town was developed by a public corporation, the predecessor of today's Urban Renaissance Agency. The Bay Bridge was built by the national government as part of the national road system. The rest of the projects were developed through a mix of domestic and foreign bonds issued by the city, national subsidies, and the urban development public corporation.

Citizens remained at the center of activity, even for this vision of massive infrastructure. With the projects selected, Asukata undertook an aggressive and sustained campaign of direct contact with citizens so that the vision became common. After being blocked repeatedly by the city assembly, and persisting through several attempts nonetheless, he was able to hold the “10 000 citizen convention” in 1967. Even the title of the plan was centered on the citizen, calling for “the citizen to design future Yokohama” (*shimin ga tsukuru Yokohama no mirai*).⁶ In time, the city would introduce a whole layer of deliberative citizen councils, the “Machizukuri Council Districts” (MCD). In those, citizens, local firms and city officials would devise detailed local plans, which were then translated into district guidelines for the use of zoning incentives and other policy instruments. The devil is in the detail in citizen participation, and at this distance in time it is not clear precisely how some of the common problems of participation — such as capture or domination by those who shout the loudest — were mitigated or overcome. It may be that the place of participation at the heart of the administration, in the Mayor's vision and in the culture and practice of Tamura's departments and others (as below), meant such problems were serially tackled and addressed in their context, as is perhaps the only viable route to overcoming them.

⁵A public body established by the national government in 1956 and privatized in 2005.

⁶(Dimmer, 2012)

The citizens' convention was a beginning, not an end. Even after the convention, Asukata continued to invest heavily in securing and maintaining citizen participation in and support for the projects. He employed a diverse arsenal of communication techniques, such as colorful cartoons and posters demonstrating the six projects and distributed in schools (“infographics” are not as new as some would believe). He hired an eclectic mix of former student activists, many of whom had led protests in the turbulent early 1960s, to run citizens' welfare programs and citizen outreach. This range of activity was spearheaded by Mr Narumi, who was head-hunted to the city by Asukata and experienced in community building and in coalition management. He utilized the political capital this created in negotiations with the municipal assembly, and relied on ordinary people to maintain the projects directly (via his reelection) and indirectly (by raising the political cost of abandoning them for any successor).

The projects came onstream in phases over the following decade(s). A timeline of the projects' key milestones is as follows:

- i. *Strengthening of the city center:* Opening of the city center promenade and the Bashamichi shopping street, 1976; opening of the Yokohama Station east and west free passages and Isezaki Mall, 1980; start of construction of Minato Mirai 21 project, 1983; opening of Nippon Maru Memorial Park and Yokohama Shintoshu Building, 1985.
- ii. *Kohoku New Town:* Approval of final plans in 1974, first residents moved into apartments in 1983, and prior to both, enactment of New City Planning Act and Guidelines for Developing Residential Land in 1968
- iii. *Kanazawa Land Reclamation:* Land reclamation completed in 1977, factory relocation, introduction of new traffic system and Bayshore route, development of Marine Park, all followed within a few years
- iv. *Construction of the subway:* First lines opened in 1972, expanded over subsequent years, later connected to a major railway line in Tokyo, and green space reclamation conducted above lines, along with reopening watercourses (streams/river) in prior industrial areas
- v. *Construction of highway network:* Major bypass opened in 1980, construction of arterial roads ongoing since
- vi. *Construction of Bay Bridge:* Fully opened in 1989

The mayor changed, the projects didn't. In contrast to an often-repeated, sometimes considered natural pattern, the six big projects did not lose momentum, or their place at the core of the city administration's activity, after Mayor Asukata left office in 1978. They have become institutional memories, so that many senior city officials today recall and make immediate reference to when asked about the city. The story and its techniques spread to other cities in Japan — in part due to the activities of Tamura himself, who advised many cities after retiring from Yokohama. Today even some ordinary people outside Yokohama when asked about the city still make reference to the six big projects. In all, the projects were woven into the identity of the city to such an extent

that fifty years after their formulation they remain common knowledge.

Project Execution

The Bureau of Planning and Coordination. A few years after joining the city administration, in 1968, Tamura created a new bureau. It reported directly to the mayor, and was “considered slightly above the other bureaus”. The bureau was given the authority to resolve coordination failures during implementation, as well as to oversee and approve revisions in the specific project plans (the same word in Japanese can mean “coordination” and “adjustment”). The bureau initially had a staff of approximately fifteen officials, recruited by Tamura personally, who sought out rising young officials from across the line departments that would be involved in the projects while similar bureaus in other cities have only administrative staffs.⁷

Routines of clearing blockages and gathering information. Tamura himself chaired a monthly meeting where blockages in the projects or large-scale revisions were discussed and resolved. He also made a practice of seeking out and gathering information from Deputy Directors (junior-level staff) in the other bureaus, particularly those involved in front-line implementation. As the bureau was in charge of negotiations with the private sector about land sales and alterations in land-use rights, it became a form of clearing-house of information — from junior staff, from seniors in the monthly meeting, and from outside the administration.

Within the framework of the six big projects, adjusting the plans was routine. As but one example, the routing of the subway line(s) was changed dramatically from the original plans. The Kanazawa area, though it did come to house significant industry and port activity, also became an area of research and academic activity with the founding there of Yokohama City University in 1949 (today one of the world's leading small universities). When asked how much of the plans were altered during execution and how much stayed the same, a now-retired official, young during that era, estimated that 80% of the plans' contents were revised and only 20% remained the same. Continuous adjustment was so much a part of the culture of the bureau that, when the same official was told of the “70/30” rule followed by Malaysia's PEMANDU today (70% adjustment/30% original plan),⁸ he stated that he believed that their higher percentage of revised plans was superior, since no plan can be perfect at its outset.

The “Yokohama Formula”, “pursuing publicness” and the “council districts”. The bureau's activities were not confined to the six major projects. It was also concerned with municipal design, with a mission statement to “pursue publicness” in all major projects, and “create places, where people can come in contact with each other and communicate”. They

⁷ (Tamura, 1983)

⁸ (Sabel & Jordan, 2014)

did so through a system of incentive zoning,⁹ as well as height controls, floor area ratios and public space requirements. The system was linked to a schema of exceptions clearly tied to the creation of public space or preservation of historical landmarks. In developing and implementing this system, the bureau was actively involved with both the private sector and citizens themselves, through a layer of “Machizukuri Council Districts” — public deliberations between the city, local residents and the business community that specified how these principles and regulations would be put into practice.

Shaping the broader culture: fixing meetings, engaging young officials. Beyond the bureau itself, Tamura also consciously shaped the culture of officials within the city administration. From the moment he joined, he consciously worked on retooling the often-ignored production line of public administration — meetings. He changed their practice, for example by installing an extra-large (3.3 m²) drawing desk at the center of the office. Having round-table discussions at the desk, both the senior and young staffs delineated their ideas on tracing paper and lay over them on maps and drawings (a precursor of today’s design thinking). Also, the bureau regularly had all staffs meeting where subsection chiefs and staffs report their progress. As mentioned above, he met regularly with younger, front-line officials to gather information and provide them with advice. He created “study groups”, which he would personally attend and whose subjects he would often select. These were intended to broaden the field of reference of young officials while also knitting them closer together. Even after his retirement from the city administration, indeed until only shortly before he passed away, Tamura would still return to attend or chair these study sessions — once doing so after a visit (in his 70s) to Machu Pichu. One official spoke of “thousands being directly or indirectly shaped by Tamura and his ideas”, and another of a “Tamura School” still existing in policy circles. This deep cultural change provided further ballast for the six projects and the transformation plan long after Asukata and then Tamura left office.

Call it “community building”, not “urban planning”. Across all these activities, Tamura emphasized the centrality of citizens. As noted above, he called the integrated plan itself that of “the citizen designing future Yokohama”. He emphasized ideas of publicness and connectedness both in the selection of the projects and their execution, as well as broader urban planning. In fact, he exhorted his team not to call their work “urban planning”, but instead “community building”. In recent years, it has become fashionable again to talk of citizen participation. In practice, this can and often does devolve into what a participant once described as, “you walk in the door, sit at the front, talk a lot, and take a few safe questions at the end — or disengage when attacked”. By contrast, the Yokohama city administration put citizens at the center in rigorous and sustained practice. From a massive citizens’ convention, to embedded routines of public delibera-

tion in the council districts, ideas often in danger of degenerating into mere virtue signaling were employed in a difficult and sustained transformation.

Similarities and regularities with some present ideas. The passage of time has made it difficult to retrieve full details of the processes of this department, such as the details of its routine and precisely how it brought blockages to the surface and resolved them. Nevertheless, what is known bares striking similarities to ideas of “recursive implementation”, “problem-driven iterative adaption”, and similar models.¹⁰ The similarities include a routine of bringing problems to the surface (“bump up”); clearing blockages through a seldom used but credible recourse to authority (“penalty default”); a rhythm of iteration and an acceptance, even a welcoming, of revision; an emphasis on beginning from strongly felt problems, whether within the administration or among the people; and a carefully thought through set of institutional structures and processes to give practical meaning to these principles. While it is difficult to tell how much of this was shared with other Japanese cities in the period, planning at the time has been characterized as strongly linear and “top-down”. Both contemporaries and those with a living memory of the period still describe it as remarkable and singular.

Expanding the “Mayor’s Wedge”

Constraints as severe as those facing many cities today. A striking feature of this period is how the mayor and Mr Tamura approached the constraints of urban governance. Those constraints were severe: limited formal authority for municipal administration; an opposing party controlling the levers of power in national government; entrenched and likely hostile local interests; rapid demographic change in the country as a whole, including uncontrollable in-migration. Its neighbor, Tokyo, was already a megacity, swiftly becoming the largest city in the world, the capital in a centralized country. Tokyo drove Yokohama’s structural context — the population growth and regional economy in the Kanto plain. Nor was there a recent history of autonomy, but the opposite: 44% of Yokohama was burnt down by air raids during the war, and 90% of the port facilities and almost a third of the urban area had been requisitioned by the Allied occupation¹¹.

Rather than resignation, a set of overlapping strategies to expand autonomy. In the face of so limited a “mayor’s wedge”, the mayor and Mr Tamura not only expanded the city’s autonomy, but put that expansion at the heart of their project. To do this in practice, they pursued multiple strategies, often in tandem. While these strategies, which are described below, were undertaken by them and by other senior officials, they were made possible by the intense focus on citizens described above. Through developing a common vision and organizing the enthusiasm for it, they generated

⁹ Providing exemptions to height and some other rules to developers who agreed to provide certain local public goods, such as restoring a historical monument or building a park

¹⁰ (Sabel & Jordan, 2014) (Andrews, Pritchett, & Woolcock, 2017)

¹¹ (Masaki, 1965)

political capital that could be used in assembling coalitions and initiating and conducting negotiations.

The assembly and management of developmental coalitions. The city administration sought to avoid making any interest a categorical opponent. Rather, it actively sought contexts in which even those opposed to some parts of its agenda might find it in their self-interest to cooperate on other parts. That already influenced the selection of the six big projects, as described above — by ensuring each had a coalition in support, the odds of any given actor being able to support at least one project were high. As an example, whatever the resistance of the port and its surrounding industries might be to relocation, the highway network and bay bridge would be a critical enabler for them, cutting drastically the costs of transporting goods inland. The administration was therefore able to convince those interests to exert pressure on members of the national Diet to obtain funding for the highways. Conversely, while property developers might be opposed to the regulations on suburban development and its concentration in the Kohoku New Town, they would be in favor of the relocation of the downtown area, with the consequent increase in value of central property and the opening of more land there to development. Throughout implementation, the administration would actively seek new allies, without categorizing fixed sets of opponents and supporters.

Turning single-issue negotiations into multi-part deliberations, as with labor and air pollution. Mayor Asukata's base was in the labor movement, and he would regularly use those ties to create channels for discussion or forums of negotiation. For example, if a major employer, such as the railways or industry, were engaged in difficult labor negotiations, the Mayor would suggest folding these into a forum that discussed workers' concerns and the company's impact more broadly. That would naturally lead into discussions about the economic and physical restructuring then taking place in the city. The settlements that were reached then had the weight of the overall deal to support compliance. For example, Japan did not have legislation governing air quality until 1968. However, soon after taking office Asukata used this technique to reach a deal with heavy industry that included those industries investing early in air pollution reduction. Though the absence of regulation meant that the deal would be difficult to enforce legally, industry knew that violating it would jeopardize the broader deal, which might reignite labor strife, and hence be extremely costly for them.

Willingness to find and use ambiguity in national legislation or regulations. The city administration sought out areas of ambiguity and then tried to match them with creative new policy instruments. Some examples were already described above — the “Yokohama Formula”, including a form of incentive zoning, called the “Urban Environmental Design System” (UEDS), as well as “Machizukuri Council Districts” for participative planning (see above). Perhaps the most striking cases, however, were the quasi-regulations issued as “Administrative Guidance”. These are described in detail in Box 1.

Patience and persistence in negotiations. The city administration repeatedly mixed persuasion, confrontation and persistence in negotiation when handling vested interests. For example, they convinced one of the country's largest shipbuilding company to relocate its shipyard. The city needed to acquire this parcel in the heart of the city to create a new urban center. However, as port-related industry in 1960's played a central role in Japan's high economic growth, shipbuilding companies at the time held significant power over the country with various supports from the central government. In addition, the city was far less autonomous with limited budget compared with today. Thus, the city had to guide spontaneous relocation of the shipyard without paying compensation fee and to anchor the company and port-related economies to other districts inside the city. Before undertaking delicate negotiations with the company, the city secured a relocation site by deciding to reclaim large industrial land in a suburban area. They also persistently responded to the company's requests regarding size and condition of the relocation site although these requests were altered many times through economic changes of shipbuilding boom, oil crisis, and recession. The city bureaus also consolidated for the relocation. Although the port bureau had hardly rejected the company's request due to its overwhelming power, the city at the time did not allow the company to even slightly extend the area of the existing shipyard. Witnessing the city's tenacious attitude, the heavy industry giant started to seriously consider that the relocation is inevitable. After city's persistent negotiations over ten years, the company in the end agreed to purchase a parcel of the newly reclaimed land and transfer its shipyard from the urban center. In exchange, the company was able to retain a piece of prime land in the urban center to partially offset the costs.

Opening channels to national government through careful recruiting. Soon after he joined, Tamura headhunted one of the most promising young officials in the Ministry of Construction (the equivalent of the Ministry of Public Works). The young official was a Yokohama native, and had graduated near the top of his class at the University of Tokyo Law School, the traditional training school for elite national officials. The contacts he brought with him, and the respect he held, allowed Tamura to open informal channels of communication to senior officials at a crucial moment. Such recruiting may be easier said than done. What seems to have made it possible was the sense among many young officials that new and exciting things were happening in Yokohama, and that sense of possibility combined with the activation of civic pride proved potent recruiting tools.

Creating symbolic moments to alter a sense of the possible. Tamura's first major act on joining the city administration was to change a planned overpass highway through the old center of the city into a tunneled underpass instead. The overpass was not funded by the city, but by the national government and the prefecture (provincial-equivalent). As such, most city officials would have considered it a *fait accompli*, with little ability to affect it. Tamura, however, decided that the overpass would destroy the fabric of the area, and it

had to be diverted. He conducted a wide-ranging campaign, using all of the techniques described above — this was the point when he poached the young official from the Ministry of Construction — and eventually succeeded in having the plan revised. It might be noted this was in the mid-1960s, years before the dangers of overpasses for community fabric had become common wisdom, and the project remained relatively small in the scope (unlike some tunneling me-

ga-projects). Most importantly, two observers independently recalled this as an act remembered for its symbolism, and the message it conveyed to officials — that even the largest plans could be revised, and that even on such a project, they could take the city’s future into the hands of its own citizens and administration.

Box: Administrative Guidance

The term “administrative guidance” referred to documents still used today to describe internal regulations *within* government. The Asukata administration, however, decided that it could be used as a form of regulations for the city. That is, by issuing documents under the form of such guidance, but with content applying outside the city administration, they could in effect create a new instrument, legally ambiguous but rooted in formal structures and available only to the administration.

If the city had just proclaimed such “guidance” and then used coercion to enforce it, it would likely have been at best ineffective and at worst harmful. The issuing of such guidance was therefore done after the administration had concluded a negotiation over its contents with the most significant private (or quasi-private) private sector actor in the relevant sector. More specifically, the city would come to a bilateral agreement, and then generalize the terms of that agreement into the administrative guidance.

For example, at the time the largest housing developers in Japan were the railways, who built housing units along their lines. When the Tokyu Railway Company built a new railway line (the Tama Denentoshi line), and a large amount of housing along the line, the city negotiated with it that the company would bear a significant part of the expense for building primary schools in those areas. In a similar vein, the city negotiated with other railways about the floor area and other spatial regulations of developments along their lines. As with the negotiations over

air pollution, Asukata went through the railway union to trigger the negotiation and create additional incentives for abiding by it.

The city then generalized the content of this pact to issue the “administrative guidance” for large-scale real estate development in general. For example, the method was used to issue maximum floor area ratio guidance for the area around Shin-Yokohama (see below), to avoid it becoming a bedroom community for Tokyo. Beyond the bilateral pacts, compliance by business in general would be patchy, and many guidance documents were challenged and defeated in courts.

Yet with the largest actors already agreed to the terms, with some number of companies complying out of a sense of civic ownership resulting from the city’s convincing articulation of its vision, and some other number complying out of fear, the amount of non-compliance could be tolerated, and remained an improvement on the status quo ante. Eventually, in the late 1990s, national legislation clarified the internal-only application of administrative guidance, ending its use in this fashion. By that time, many of the principles, ideas, and even specific regulations that had been embodied in Yokohama’s administrative guidance documents had become part of national law. In its evolution, however, from the multifaceted engagement with the private sector and civil society, its concentration on citizen welfare, in the joint elaboration of standards and problem solving through deliberation, and in its creativity, the “administrative guidance” became a quintessential tool of the Yokohama formula.

Evaluation

The vision realized. The six big projects took time, as any of that magnitude would, but all were completed: the port moved and the city center was reknit; the northern suburbs and southern industrial areas were built; the bridge, highways, and subways were completed. More generally, Tamura's vision was realized. The city not merely survived but grew from strength to strength in the 1970s and 1980s even as the port and heavy industry dwindled in their significance. It is perhaps instructive to think of how many other large ports that were not global financial centers have managed to restructure away from that dependence. Even Singapore, for example, vaunted in many ways, remains dependent on what is essentially a commodity business, container transshipment in its port. Many of the cases of urban decline in the US and Europe fit precisely the old Yokohama profile: with port-based concentrations of heavy industry near to or part of large urban agglomerations, when these ports and industries became obsolete, the cities that dependent on them also became ghost towns.

Industrial growth reoriented. The completion of the projects altered the growth dynamics of the city. The port successfully navigated containerization, and today handles almost 3 million containers a year, with some of the world's highest productivity levels.¹² Heavy industry has also continued. For example, the shipyards are still active and have moved into higher-value activities — Mitsubishi Heavy this year decided to consolidate all its ship design work there in a new “vessel and marine technology center”. But the city is not and for a long time has not been dependent on them.

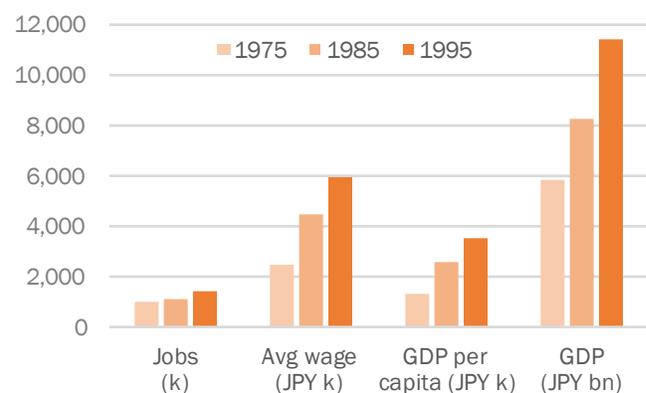
New engines of growth. The center of the city became an engine of growth in services and cultural activity. The spill over from Tokyo became an asset, rather than a liability, contained in Kohoku New Town at first and then attracting high-income residents in search of a different quality of life to the capital. The northern areas of the city, spared from residential sprawl, became in the 1980s a center of Japan's electronics manufacturing, and then a new economic node focused around the Shinkansen station, linked to the city center by subway. The southern Kanazawa area, along with a new university (Yokohama City), became a second dense concentration of industrial activity, complementing the Keihin area in the north. Each of these area-based transformations was crucially dependent on the linear transport projects — without the bay bridge, the city center would have been choked with traffic, even if the shipyards and port moved; without the subway system, Kohoku New Town would have risked being unattractive, and the later semi-conductor cluster perhaps unlikely to develop; without the expressway system, the industrial relocation could have resulted in stranded or uncompetitive plants. There were nuances to each of these developments, especially that of the downtown development,

in later decades. But, overall, through the implementation capabilities that delivered all six of the projects, the city managed to build new comparative advantages, without sacrificing or ignoring the old.

Huge population influx incomes steadily rising. In the decades after the mid-1960s, Yokohama's population more than doubled, to 3.3 million by 1995. Even as the city's traditional strengths, in industry and the port, became steadily less important, and the tailwinds of rapid catch-up growth and demographic expansion abated, the city continued to grow rapidly. While in the period 1975-1995 average wages in the city increased more than two-fold (in nominal terms) and real gross city product per capita increased by 50%+ (Figure 4).

The (always) difficult question of attribution. It is difficult, if not impossible, to fully disentangle the results of the Asukata era from the external influences shaping Yokohama. Undoubtedly, the rapid transformation of Japan's national economy and the rapid growth and development of Tokyo in the period provided strong tailwinds. Still, one might observe that there are many other cities in the region around Tokyo. Kawasaki, for example, is in fact closer to the capital, and today firms express an almost equivalent locational preference between it and Yokohama, indicating a limited inherent advantage of one versus the other. Another contrast might be Kobe. Though it is not near Tokyo, and hence could not reasonably be expected to grow as rapidly in size, it is similar in many respects to Yokohama — also one of Japan's first open ports, also a leader in its early 20th century industrialization. Yet until the earthquake in 1995, Kobe attempted no transformation of any comparable magnitude to that done by Yokohama in the 1960s, and it arrived in the 1990s far more dependent on heavy industry, low-value manufacturing and its port.

Figure 4: GROWTH IN THREE DECADES AFTER ERA OF SIX BIG PROJECTS



Source: Report on Prefectural Account, Cabinet Office of Japan

¹² https://www.joc.com/port-news/port-productivity/chinese-ports-lead-world-berth-productivity-joc-group-inc-data-shows_20140624.html

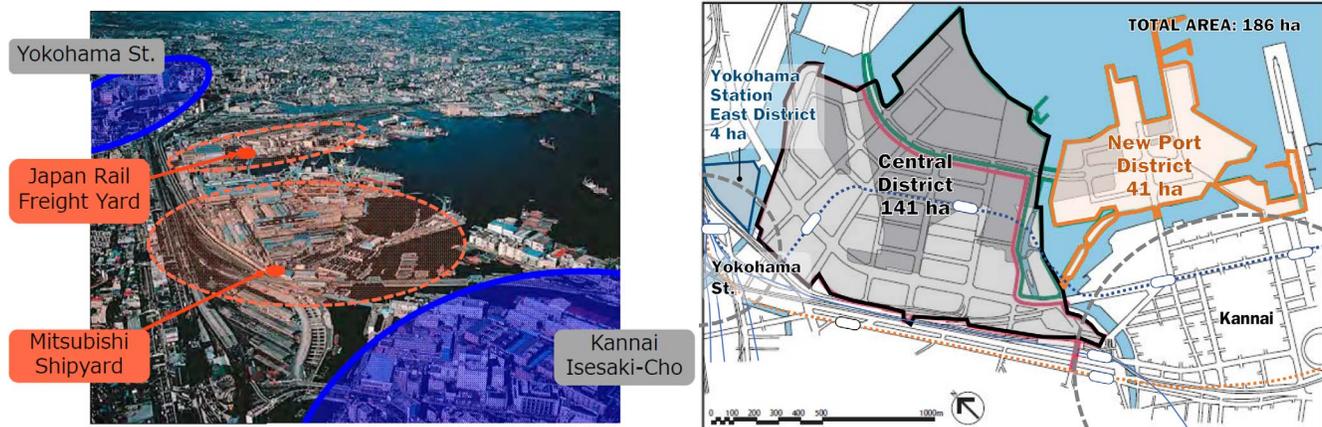
NEW CITIES: 1986-2010

Minato Mirai 21

Rationale: connecting the old city centers into an integrated urban core. The idea of creating a major downtown area (later called Minato Mirai 21) through land reclamation was part of the “six priority projects” that began in 1965. Mayor Asukata and Mr. Tamura wanted the vast shipyards that occupied MM21 that separated the two prior downtown areas (Kannai and Yokohama train station, Figure 5), to be relocated. Land adjustment could then connect and integrate the two old areas, with a “new city” called MM21. These areas together would form a new urban core. By creating this urban core with substantial economic activities planned, it was expected that the city could become an “international cultural management city”, Asukata and Tamura’s term for an outward-oriented city with a concentration of high-value added activities and a high quality of life.

A significant expansion of scale, in a period of excess scale. Minato Mirai 21 (“port of the future 21[st century]”) covers 186 hectares (1.86 million sqm) of area. The central business district with 141 hectares occupies 76% of the total land, and it is the core of MM21. Importantly, the original conception for MM21 was much smaller: only 110 Hectares, or almost 40% smaller. The decision to expand it so significantly was taken in the early 1980s. A large national subsidy was granted for the land reclamation, and the period was near the peak of Japan’s economic expansion, when it appears that many cities were expanding the scale of large reclamation projects (for example, in the same years Kobe undertook an even larger reclamation, the second phase of its ‘New Port Island’). Reclamation and land adjustment began in 1983, and stretched out over the subsequent eight years, so that the project opened into the teeth of Japan’s post-bubble “lost decade”.

Figure 5: Minato Mirai Reclaimed Land and Prior Use



Source: City of Yokohama (Left), Edited by authors with data from MINATO MIRAI 21 Information vol.88 p. 14 Infrastructure Development, City of Yokohama (Right)

Thirty years later, some success, but lagging demand.

MM21 has avoided becoming a “ghost city”, a common fate among “new city” developments. As of today, almost three quarters of its area (73.1%) has been developed, with a low vacancy rate (under 10%) in those buildings. On the other hand, the area possessed significant strengths — a central position in a large city, in one of the world’s largest metropolitan areas. For comparison, then, it is instructive to consider it alongside Canary Wharf of east London, and Jersey City in metropolitan New York. All three projects shared an objective to rejuvenate a run-down waterfront urban area, with a similar development size and timeline. All three focused on a mix of office space, retail, residential, and public open spaces (parks, etc.). Each now sustains around 100,000 jobs, with MM21’s jobs concentrated in head offices, some R&D, and retail and tourism; Canary Wharf in financial services; and Jersey City in high-value back office functions (Table 1).

Where is the demand? Where MM21 has significantly underperformed is the growth (or lack thereof) of demand. Most of the land in Canary Wharf was built up by the 1990s. In the same period, few to no major office buildings had been established in MM21. While Canary Wharf achieved “Grade A” office status with a critical mass within 10-20 years, and has become the *de facto* second financial center of London, MM21 seemed to be lagging. In MM21, “true” activity only started to come when Nissan moved its headquarter to this area in 2009, and Fuji Xerox opened an R&D facility in 2010. The tenant type of MM21 remained primarily complementary to, rather than competing with, Tokyo, with a focus on R&D and heavy industrial firms. On the other hand, this

should not be taken as necessarily problematic, since — as is discussed below — the effects of headquarters versus R&D or design functions may be overstated. It has been argued that much MM21’s activity prior to 2010 was cannibalized, with most of the jobs “created” being simply companies moving into the area from older offices in the Kannai area.¹³ While there may be some truth to this argument the relative small size of offices in the Kannai area, raises doubt of the strength of this assertion.

A slow start meets large scale and a depressed economy in the critical first phase. The first phase of a development project is critical, as the type of tenants and investors attracted defines the market position and value of the project, which in turn determines financing and further transport infrastructure upgrades in subsequent phases.¹⁴ The early years of MM21 coincided with the aftermath of Japan’s asset price bubble, with falling demand and prices for real estate. The area had a handful of major “anchor tenants”, including an international conference center and the Yokohama Landmark Tower, which opened in 1993. But, scattered across such a vast area of land, with over a kilometer of — at the time — mostly empty land separating them, these could not form agglomeration economies or crowd-in others. In contrast, one might note that the central business area of Canary Wharf is roughly 40 Ha. in size, or less than one quarter the land footprint of MM21, so that the first buildings could create a much greater sense of density and connectedness. Overall, it is instructive to consider a counterfactual: Had MM21 been executed at its original scale, and been ready in the late 1980s instead of the early 1990s, with a greater sense of density and connectedness from the start, would MM21 have been more successful than what it is today?

¹³ (Blakeney, 2010)

¹⁴ For example, if vacancy rate in phase 1 was too high, the population doesn’t justify putting in extra money to upgrade or extend transport infrastructure, for example, a metro line, which in turn will create a vicious circle to next phases of development should major “promised” infrastructure was not in place on time.

Table 1: A comparison of MM21, Canary Wharf, and Jersey City.

	Minato Mirai 21, Yokohama City	Canary Wharf, East London	Jersey City Downtown, Metro New York
Site area	1.86 million sqm	1.95 million sqm	5.8 million sqm
Completed built space	0.75 million sqm	1.4 million sqm completed	1.5 million sqm completed
Planned built space	Extra 0.12 million sqm planned	Extra 0.49 million sqm planned	Extra 0.68 million sqm planned
Land use/functions	Office (front and back office), retail, residential	Office (front office), retail, residential	Office (back office), retail, residential, parks
Major developers	Urban Renaissance Agency (land readjustment), City Government (reclamation), Port Authority and national government	London Docklands; Olympia & York; Local council and city government (affordable housing and co-financing of subway line)	The LeFrak Organization; Kushner Companies;
Employment/population	102,000	105,000	84,072
Development rate	73.1%	~100% (no substantial vacant land left)	~100% (no substantial vacant land left)
Key tenants	Mainly R&D, Industrial firms (mostly branch offices, headquarters emerging): Nissan, Mitsubishi Heavy Industry, Chiyoda, JGC, Shincron	Mainly financial and business services headquarters (e.g., Barclays, Citigroup, Moody's, Morgan Stanley, S&P Global)	Back offices (and some headquarters) of corporations in financial and business services, and transport and airline companies (e.g., UBS, JPMorgan Chase)
Incentives provided by government	Local tax exemption (halving property tax and urban planning tax for the first five years); capital allowance to investors	Local tax exemption; capital allowance to investors	Business tax incentives, various loans and grants to priority areas such as manufacturing retention, SMEs, technology and innovation

Source: Literature search.¹⁵

Although muted by special purpose vehicles, the project may have exerted long-term fiscal drag. Like many urban redevelopment projects, MM21's fortunes fluctuated in the past three decades as macroeconomic cycle hit both the business and real estate communities (and they tend to be highly correlated). When demand fell short of expectations, the local fiscal impact was significant for MM21, but less so for Canary Wharf and Jersey City, in which the private sector shared a considerable amount of development risk. In fact, the main developer of Canary Wharf, Olympia & York went bankrupt in the early 1990s and had to be restructured. When structuring an urban redevelopment project, it is essential for the public authority to evaluate and plan "for the worst" which often means if the economy hits bottom, there

should be plans on what other optional social and public spending can be cut back versus taking a toll on essential services. If the debt servicing would put on too much burden on a city, and essential public services had to be discontinued should the project turn sour, then perhaps the city was not ready to take on the project. In the case of Yokohama and MM21, the debt service costs were not exorbitant (Table 2) — at JPY 84 billion, or less than USD 1 billion, over two decades, or less than JPY 5 billion per year. However, that resulted only from part of the land reclamation, and so represents a small share of the total project costs. The remainder was funded through national subsidies, channeled via the Port Authority or Urban Renaissance. It is not clear whether this crowded out other possible national subsidies — indeed the overall financial structure, and total cost and debt burden, remains somewhat opaque and difficult to piece together even today. It has been claimed the project did mean the city had to underinvest in facilities like libraries and schools, and on some of these metrics it does rank among the lowest in Japan per capita (Figure 6). It is, however, difficult to substantiate any causal relationship between MM21 and such underinvestment, and the project did significantly increase tax revenue of the city. At the least, though, the excess scale of MM21 is unlikely to have supported fiscal freedom in the city in the short-run.

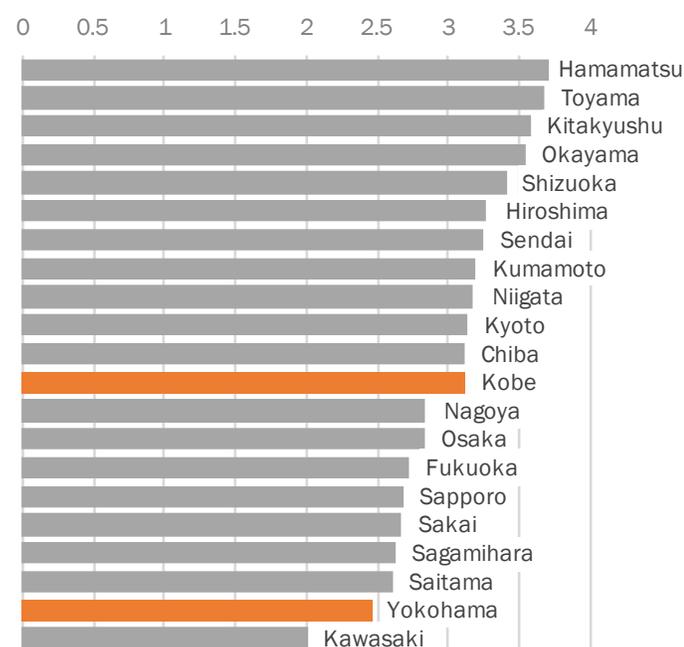
¹⁵ Clippings from *Summary of Minato Mirai 21 project by City of Yokohama*; "Financial News London"; "Canary Wharf: An Establishment of a Major Business District" (2005), master's thesis by Carolina Herling and Caroline Liljedahl, Royal Institute of Technology Stockholm; "Waterfront Access and Downtown Circulation Study" (2007), by Jersey City Government; <http://www.city.yokohama.lg.jp/keizai/yuchi/support/>

Table 2: Project cost of Minato Mirai 21 land reclamation (JPY billion)

Expenditure	Project cost	Income	Project income
Construction cost	97.0	by selling land	156.0
		by selling land rent rights	30.7
Compensation cost	40.2	by renting land	8.3
Management cost	13.6	Others	30.4
Debt service cost	84.3	Allotment from profit of other projects in the same account	9.7
Total expenditure	235.1	Total income	235.1

Source: Third mid-term plan - the account for land reclamation, Port Bureau in City of Yokohama, 2010

FIGURE 6: SCHOOLS PER 10,000 POPULATION, JAPANESE CITIES



Source: e-Stat (Government Portal Site of Official Statistics of Japan)

Shin-Yokohama

A station somewhat on the outskirts. In the early 1960s, the Japanese government was rushing to complete the world's first bullet train (shinkansen). The line would run from Tokyo to Osaka, with a stop planned for Yokohama. The city had hoped the line would pass through the existing Yokohama train station. But the overwhelming imperative to open the line before the 1964 Olympics meant that the line had to be built on the straightest route possible, and in the shortest time. That resulted in the station being placed in an area that was then largely agricultural, roughly equidistant between the city center (where Yokohama station was) and what became the Kohoku New Town, that is the area of mostly residential suburbs for the spillover from Tokyo. The station was called "Shin-Yokohama" (new Yokohama).

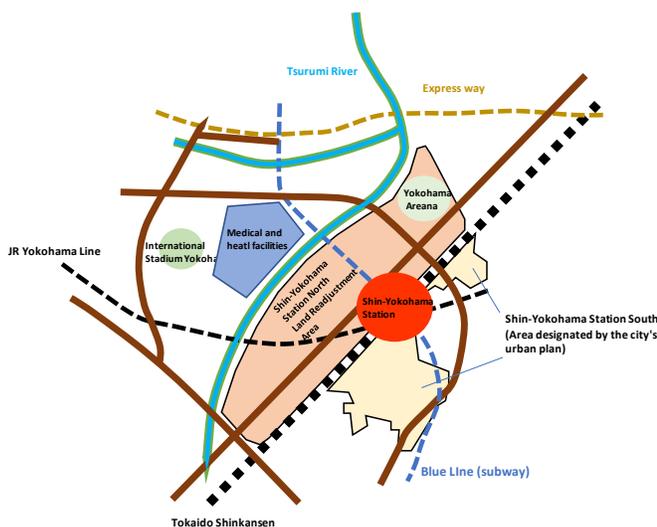
Cabbages, and a few factories. From 1964 to 1986 the area with 80 hectares of readjusted land in front of the Shin-Yokohama station saw very little growth (a pattern reported to be not unusual around Shinkansen stations in Japan). In 1981 there were only 4,000 employees in companies near the station, and by 1986, there were just over 7,000. The only activity was that some of Japan's electronics companies, at the time near the peak of their growth, had set up factories in the area. Yet as one of the officials responsible for its urban planning at the time now recalls, in the early 1980s the area was still "mostly cabbages".

Avoiding a bedroom community. Although development around a shinkansen station would not have been inevitable, the slow development of Shin-Yokohama is something of a puzzle. It is a mere twenty minutes by the bullet train to the heart of Tokyo, faster than subway commutes from much of Tokyo itself. Although the Tokyo real estate bubble only truly soared after 1986, the first two decades after Shin-Yokohama opened were still a period of rapid population and economic growth in the capital. It would seem, then, that developing apartments or other forms of residential real estate around Shin-Yokohama would have offered high returns. It is not clear why this did not happen. When asked, officials from the time pointed to the regulation of floor-area ratios in the area, through use of the "administrative guidance" described above. Another possible explanation may be that the Kohoku New Town served as a kind of "shield" for Shin-Yokohama, absorbing residential spill-over from Tokyo that otherwise would have concentrated there. The "New Town" offered, and still offers, a dense agglomeration of retail, commercial and cultural activities, and is geographically even closer to Tokyo. Such advantages, along with the incentive zoning schemes available in the "New Town", may have outweighed the attractions of the bullet train station. Both these reasons are ultimately speculative, though it is perhaps notable that both have their roots in the "six big projects".

A subway station, then a stadium. The area truly started to change in the mid-1980s. A subway station was opened at Shin-Yokohama in 1985, providing it a rapid connection to Yokohama station, and to the residential concentration in Kohoku. In 1989, the Yokohama Arena, a huge hall where many music concert and conventions were held, was opened

in the Shin-Yokohama area. In 1998, International Stadium Yokohama was then opened in an adjacent park, hosting the World Cup Final of 2002 (Figure 7). The late 1980s were also the time of bubble-era land prices in Tokyo, which caused many firms to look for new locations outside the capital. In all, between 1986 and 1991 both the number of firms and the number of employees tripled, with the latter reaching almost 25,000.

Figure 7 Map of Shin-Yokohama District



Source: Produced by the author based on Basic Plan for New Yokohama Urban Center, 1999

A growing number of semiconductor firms. Notably, a cluster of firms in the semiconductor-related industries took root, both in design and in distribution. A few such firms had already been started in Yokohama in the early 1970s, but it remains unclear what may have precipitated this, and they seem to have remained quite small or scattered in the following decades. It is also not clear what precipitated their growing concentration in the Shin-Yokohama area. However, this is an industry that involves high skills and high value add, yet is also cyclical and requires constant access to demanding clients and new research. As such, it would derive significant value, and have a high propensity to pay for, rapid access into central Tokyo. The shinkansen may then have been more attractive to it than other sectors, as would the proximity of the electronics plants established in the area in the preceding decades.

Growth throughout the “lost decade”. While Minato Mirai struggled to attract tenants in the 1990s, the national economy suffered through the post-bubble “lost decade”, and the Tokyo land bubble ended, Shin-Yokohama continued to grow. Once it had reached critical mass, its exceptionally strong location and strategic combination of infrastructure made it one of the few urban areas in Yokohama (if not the country) to post strong growth. From 1991 to 2001 the number of firms almost doubled, and the number of employees expanded by two thirds, to almost 40,000. Nor did this growth stop in the 2000s, though it did slow down. By 2009 the area had some 55,000 jobs (Figure 8).

Figure 8: shin-yokohama employment growth



Source: Offices in City of Yokohama

A developing cluster. Semiconductor firms remain a visible part of this landscape. One firm, Macnica, has become one of the world’s leading semiconductor distributors. It listed publicly in 2000, has been growing revenues at the average rate of 25% per year in the past three years,¹⁶ and has doubled its office footprint in the area through acquiring a second building. It is also home to a wide range of semiconductor design firms, ranging in size from SMEs to some of the world’s largest (including ARM). It is also home to the Japan offices of leading Electronic Design Automation (EDA) tool providers, who make the software that semiconductor firms use to design new chips. It was home to an institutionalized consortium of semiconductor design firms and research houses, known as STARC. That consortium closed its doors in 2016, and transferred its EDA-related intellectual property to the public domain. On the other hand, it is not clear how much of the commonplace and repeated interaction that characterizes a strongly connected cluster take place in the area. There did not, for example, seem much interaction between the distribution and design firms. It is also noticeable that the directory of the IT firms in the area has a very wide variation of quality and size, with many included that appear to be little more than small web development firms. That should not be taken as representative, but does indicate the absence of a local association or set of institutions that could intermediate information gathering on firm quality. For the same reason, it is hard to establish robust statistics about the nature and size of the semiconductor-related firms in the area. In all, it seems most reasonable to assume that there is a concentration of firms in the area; that a number of them collaborate, and sometimes institutionalize that collaboration; but that the type of very dense, highly organized networks that characterize clusters at the frontier of technology, still has opportunity to fully materialize.

¹⁶ From JPY 1.9 billion in 2012 to JPY 3.4 billion in 2015.

An example of catalytic intervention in an area with a strong endowment. Regardless of whether or to what extent the semiconductor industry is a “true cluster”, the Shin-Yokohama area must qualify as a success. Compared to some of the investments that cities make in trying to create new clusters, those made here were modest. One might argue they were, in effect, costless — the subway station was on a line already planned for other reasons, and had its own motivation in connecting downtown Yokohama to the shinkansen. Without entering the debate about the economic value of giant stadiums, its rationale seems to have had little to do with the development of Shin-Yokohama, and would likely have been built regardless of plans for the area. The most purposeful action seems to have been to restrict residential growth in the area in its first two decades, providing a form

of localized “advantage of backwardness” — low land prices and the presence of key industrial customers in the years when the subway and stadium provided the missing ingredients to start a growth take-off. That growth then persisted throughout an intensely difficult macro-environment, when other areas in the same city, with more public investment and fanfare, were struggling. The area is now the home of a set of companies in one of the single most demanding, frontier-level subsectors possible, and one that is a graveyard of industrial promotion elsewhere. Though perhaps modest in scale, the area is a striking demonstration — and contrast — of the potential of a few, highly strategic interventions, and their ability to truly create the new, where overly scaled and more promoted efforts may fall short.

A LOOMING CRISIS: 2015-

An ageing city. After decades of population growth, Yokohama's population will soon start to decline. The share of population 65 and over will grow to almost 30%, and hundreds of thousands of people will retire between now and 2030. This challenge will be particularly acute in the industrial and SME sectors, where founder/owners are nearing retirement, as are skilled older production workers, but younger people do not wish to succeed their parents. Some depopulation is already occurring, with 10% of the city's housing stock estimated to now stand empty, particularly in the south of the city. With regards to demographics, some city-based institutions have been devising programs related to life-long-learning — Yokohama City University, for example, has a series of courses for seniors. The city overall, however, has embodied in its plan that it will attempt to constrain spending on the elderly (e.g., transport subsidies). It was also not clear what programs might exist for extending the work-life of those elderly who wish to continue, e.g., with appropriate retraining or job placement programs. It was also not clear if the city was pursuing programs to mitigate the retirement of SME owners, or attempting to improve the environment to lift their profit margins, which could have significant fiscal benefits given corporate taxation.

Changing industries. At the same time, the advent of new vehicle technologies — autonomous driving and electric and hydrogen cars — will place significant demands on the ability of many sub-sectors in Yokohama and the surrounding area to adapt. Those sectors remain highly significant in Yokohama's economy, in which manufacturing overall makes up 14% of employment, with an unknown number in other industries dependent on them¹⁷. At the same time, those industries are undergoing and will continue to undergo fundamental shifts in production processes, with increasing automation and the possibilities of additive manufacturing. On the one hand, these may help to overcome some of the challenges associated with retiring owners and an ageing labor force, but they may also lead to a decline in jobs and a reduction in local income taxes. The balance of positive and negative is therefore likely to depend crucially on the quality of training programs for displaced workers, both those far from retirement age and those nearing it but with a desire to continue working.

Plan focused on attracting R&D and company HQs.

The city's overall plan for dealing with the crisis emphasizes attracting outside companies to the city. An emphasis is placed on attracting big-company headquarters, which has various benefits for the city. Such investor attraction can also be heavily dependent on using subsidies, which might raise some questions of whether such taxes will be significant. Some companies indicated that the taxes their employees paid, and the property taxes they generated from occupancy, were at least an order of magnitude larger than the net corporate income tax they paid to cities.

An emphasis on obtaining and executing national projects.

The city has also devised a "FutureCity" plan, which responds to the national "FutureCity Initiative". That deepens several demonstration projects underway, incorporating support from national programs. Within that are also several projects related to "smart grid", "smart city", and affiliated programs, with a "smart business association". The latter, however, was launched on the basis of a consortium that large companies established for bidding on national demonstration projects. It is of course often valuable to leverage the availability of national funds to pursue local priorities, and national programs can often spur local governments to see opportunities they otherwise would not. Where projects are previously identified, local governments are often required to devise ways to fit funds and policy support to local projects they want to implement. In the best case, problem solving proceeds by matching local problems and opportunities with the possibilities of obtaining funding support. There is, though, sometimes a risk that the emphasis becomes too great on what funds are available, with local problems still a concern but somewhat secondary. In an environment with many national funding opportunities, that risk does need to be guarded against.

A deep base of capabilities that augurs well. Yet despite its looming crisis, the city still possesses an extraordinary set of strengths. Some of those strengths are illustrated by the decisions of some of the world's leading firms, in multiple industries. Apple has recently opened one of its principle global R&D facilities in Yokohama, a facility that is said to focus on highly advanced artificial intelligence research. Nissan moved its HQ to Yokohama, but likely of more importance for the

¹⁷ Employment Status Survey, 2012

city's broader economy was its decision to produce the Leaf, its mass market electric vehicle, in the city. Not many cities in the world are home to sizeable electric vehicle production, given the high demands it places on the capabilities of both the workforce and suppliers. Both Apple and Nissan's decisions were made without city involvement (to our knowledge), and it is not clear if either required subsidies. Yokohama has a deep production base (Nissan has 50 tier I suppliers in the city area alone) in industry. Many of the old factories along the Keihin industrial belt are converting or have been converted into R&D facilities. They were first built over 100 years ago and even at the time were near the frontier of technology (at the time, mass production in a Ford factory). Minato Mirai also has several large R&D facilities, some of which did receive subsidies, with a maximum amount available of JPY 5 billion for construction costs, or around USD 50 million. This list of capabilities could be extended even further, though one last to note is the reservoir of engineering talent. In JGC and the Chiyoda Group the city has present at least two large and well established engineering companies, which regularly manage and execute some of the world's largest-scale engineering projects.

Some plans to capitalize, though not always well connected to capabilities and challenges. Some have suggested building on these strengths to transform the harbor area again, into an area emphasizing R&D and that facilitates the transition to new technologies aggressively and at scale. The city's overall strategy also has provision for internet-of-things and AI-related facilities, though it is not clear if there are substantive programs to facilitate this, beyond

standard incentive programs. On the other hand, for a city with so deep a base of capabilities in auto-related industries, in robotics, with existing electrical vehicle production and AI-related R&D facilities, there does not seem to be much emphasis on, for example, becoming one of the world's two or three leading autonomous electric car production hubs. As one example, it does not seem as if the highways have been fitted with sensors, or if Nissan or others have been engaged on the topic — the Nissan HQ showroom has a "self-driving" car for test, but with extreme limitations (only a small stretch of highway, in good weather). While at such a frontier of technology it would be risky for the city to attempt to direct or control where the private sector should invest or in what, the private sector has already signaled its intention to pursue these technologies. Beyond just Nissan, many of the "tier one" SMEs are already retooling for the changes in technology that are approaching. Moreover, autonomous electric vehicles are a single example. The broader point is that the future of the city may lie less in hunting for national programs or trying to sell subsidies to large headquarters, and more in facilitating the extraordinary strengths and spirit of the city to become world-leading in several of the technologies that will shape the global future.

CONCLUSION: A REMARKABLE, REALISTIC, DEMOCRATIC TRANSFORMATION

In a sense, to deal with its looming crisis Yokohama might be best served by considering its own history. In recent years there is a sense of a city with remarkable strengths, deep capabilities, and strong civic pride — but one that might be looking to too many small projects, or looking outside a bit too often, or looking away from its hardest challenges. Of course, in this it would be far from unique — the political economy of many cities, in Japan, and in the rest of the world, often leads to the same type of responses, or worse. And most other cities do not have the capabilities Yokohama does. As one private sector executive put it, “other cities say they will do a project, but Yokohama gets it done”. Even when, arguably, the city may have built *Minato Mirai* too large, it still bears a respectable comparison with financial services developments in London and New York — two of the most global of cities and dominant financial hubs, not prior port and industrial cities in the shadow of a capital. Even where the city might have allocated more resources to a burgeoning area, in Shin-Yokohama, that area still grew from cabbages to semiconductors in a few decades.

A range of factors lie behind Yokohama’s success. There is its proximity to Tokyo, though it is far from the only city close to the capital. There is its history as an open port, though other cities opened as ports in the same period, and few suffered the devastation that Yokohama did in World War II, or had the length and depth of its occupation. What Yokohama had, in the period from the mid-1960s to the late 1970s, does, however, seem to be unique. There were other charismatic mayors in Japan in the period — in Kobe, in Tokyo, elsewhere — but what influence there was seems to have run from Yokohama outward. Today, people can still sometimes talk of a “Yokohama model”. One interviewee noted, “in Japan, this story is known”. The senior officials that “get things done”, and the habits that allow them to do it, still speak with deep familiarity about this period of the city’s history.

What we can conclude, if not without qualification, is that a remarkable transformation happened in Yokohama; that it began when the city was led by remarkable men; and that the ideas, strategies and tactics they used were not only remarkable, but replicable, and can be linked through a coherent and credible logic to the city’s transformation. It might stand in a striking contrast to the story of a famous urban planner, Robert Moses, who remade New York in the first half of the twentieth century.¹⁸ Moses used federal funding and the power that it brought to run overpasses through the city, dislocating communities, seeking to serve the city but as he felt was best and in constant accommodation to power; Tamura used national funds too, and dislocated as well, but he fought national plans to avoid dislocating people, pushing overpasses underground, and he fought to relocate not communities, but large companies and vested interests. One sought to leave his mark on the city, confident that would make the city a better place; the other sought to remake the city for its citizens, confident that would leave a positive legacy.¹⁹

What, finally, may make this a story not just of interest but of hope is the context in which it was achieved. By now some might be used to hearing such stories about national leaders or officials, in some fortunate moment when normal conditions were suspended. But such cases in cities have been rare, except perhaps in capital cities or non-democratic states or with exceptional endowments. By contrast, Yokohama’s transformation occurred in a difficult, far from unique, democratic city, in an uneasy and often oppositional relationship to a national capital, in a centralized country. It was done not by running from democracy, but embracing it; not hiding from a technological threat, but using it; not complaining about a limited scope of action, but expanding it.

¹⁸ (Caro, 1974)

¹⁹ We are indebted to Professor Suzuki, Dean of Yokohama City University’s School of Engineering and Planning, for helping us elucidate this comparison.

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