AFD Ep 455 Links and Notes - 1IR: The Boston Associates Part I: Rise of the Machines [Bill] - Recording Jan 15, 2023

[Bill] Intro: The First Industrial Revolution arrived in the United States around the time of the Napoleonic Wars – largely as a result of US trade with Britain for manufactured goods becoming problematic enough to impose protective tariffs and embargoes. The already-wealthy elites of Boston's merchant classes began to pool their capital and set up industrial production corporations. This adoption of industrial capitalism not only preserved their existing wealth and status but took these families to new stratospheric heights of riches by the middle of the 19th century, just before the Second Industrial Revolution would kick off the astronomical riches of the Gilded Age. The Boston elites were the Old Money by then. Unlike their wealthy counterparts on the American South's slave plantations, the wealthy Bostonians were not rich from rural agricultural profits or rents in the model of the traditional English gentry. Nor were these Bostonians aiming to enter the ranks of the idle gentry farmers themselves, which had been the typical English trajectory for a rising family. They had made their money making and trading things, and they decided, in recognition of the poor soils and uncompromising land inheritance laws of New England, that their pathway to unlimited, self-propelling family wealth would be to double down on that origin story … to make whatever refinements were necessary to turn reasonably profitable production and trade into hugely profitable production and trade, through standardization, rationalization, and technologization. Which is to say: What would later be recognized as capitalism, not mere trade. This group of wealthy Bostonian investors, who were already quite interconnected with each other by the mid-1810s, whether by business or marriage or blood, became even more intertwined as they invested in each other's new industrial ventures in textiles, banking, transportation, communication, and insurance and as they donated to each other's philanthropic, cultural, academic, and public health institutions to cement their status and as they funded each other's political machinery to cement their power. Culturally, you probably know them by the label "Boston Brahmins," although we are only focusing on a subset of these. In business, they are today known as "the Boston Associates." Even other American capitalists, beginning more modestly at first, struggled for decades to compete with the startup financing resources and new capital equipment that the Boston Associates could bring to bear to exploit every fresh development and innovation of the First Industrial Revolution. Today most of the family names of the associates are still stamped across the map of Massachusetts and across buildings in Boston and other former mill towns nearby. Some of them are still powerful and recognizable families today, continuously since the late 18th or early 19th centuries. Their ranks and descendants have included Presidents, Senators, Governors, Congressmen, Supreme Court Justices, Ambassadors, and more. Some of the most famous or influential American corporations originate with them.

For this mini-series, I read and prepared detailed notes from the excellent book "Enterprising Elite: The Boston Associates and the World They Made" by Robert F. Dalzell Jr (formerly a longtime professor of American Culture at Williams College), Harvard University Press, 1987. Dalzell actually passed away a little over 6 months ago, in June 2022. https://president.williams.edu/in-memoriam/the-passing-of-robert-dalzell-jr/ Williams College noted in a tribute that one of his most popular courses was "The Rise of American Business," which he had taught since the 1970s. One of his other business culture history books was on the Rockefeller family.

One of the key arguments of the book is that the Boston Associates had scoped out the emerging industrial capitalism of Great Britain early on and clocked one of the critical observations that Karl Marx and future Marxist thinkers would also make, which is that capitalism doesn't just devour the working people, but also does a pretty good job of destroying any of the rich people who don't get on board immediately and with complete ruthlessness. This realization revealed there was a genuinely existential threat from capitalism to the wealthy mercantile classes of Boston, Massachusetts in the newly independent United States … and if they wanted to remain wealthy and powerful, they could not resist the arrival of capitalism and must instead jump first to adopt it. As we'll discuss, Francis Cabot Lowell, whose middle and surname demonstrate an existing merger of two prominent Boston families, came back from Britain in 1811 with a determination to not just copy British loom machinery but to create a coherent system of industrial production that he and his business partners could be fully in control of (p.vii)... He and his associates tested their plan in Waltham, Massachusetts, for financing and equipping a mill, finding the right workers for it, and selling the finished goods. When this demonstration concept worked, they established an entirely new mill town – the editor of the book compares it to an Industrial Park, essentially – at the confluence of the Merrimack and Concord Rivers that could be harnessed and channeled for water power through mill wheels. With that much water power on tap, multiple companies were allowed to open mills there, but all of them had at least one board member from the interconnected group of investors, which was rapidly expanding to incorporate more friends and family from these elite Boston circles. This new mill town was named Lowell, for their leader and capitalist pioneer, and thus was born the Waltham-Lowell System of industrial textile mass production and with it the entire basis of American industrialization. Soon many other rivers in the region had a mill complex like Lowell. The booming profits were rapidly reinvested in other emerging supporting industries or sectors like finance, insurance, and of course canals and finally (within a couple decades) railroads (p.viii). These helped further boost the success and profitability of the core industries they were investing in. (We've also already done episodes on topics like the [Interchangeable Parts] arms manufacturing industry of Massachusetts or the cotton gin, both from Eli Whitney of the elite Bostonian Whitney family, and we will soon be doing an episode on the watch-making industry of Massachusetts.)

Anyway that's the overview of part 1 so you can see where we're going with this. Part 2 will cover their philanthropy with a critical eye, and part 3 will cover their political activities.

I need to take a very important side tangent here before we dive in to say that it's not technically accurate to refer to everyone we'll be discussing as "Bostonian" or "from Boston" because Dalzell notes in the preface (p.x) that many of them actually grew up in or resided in more rural Massachusetts communities or other smaller New England seaport towns. However, their pre-industrial business empires were centered on Boston's trade activity and that is where they were making their original fortunes, regardless of the location of their residences at the dawn of the industrial revolution in the United States. As I mentioned earlier, they were not making their wealth in the countryside like their rural English gentry counterparts. Dalzell also underlines carefully that The Boston Associates is a historiographic term in widespread use, rather than an official title they would have used themselves or any kind of formally organized enterprise or investment group like we might see today. It hadn't been done before, and so they didn't think of doing so. However, it's a good name for us to use today because the first company that they did organize was called The Boston Manufacturing Company… And it's also a good name because it emphasizes that their innovation for industrial capitalism in the United States was not just literal technological imports or inventions but also their financial capitalization strategies, including corporations with shareholders, as well as philanthropic investment funds and more.

Dalzell also explains (p.xi) that there were other textile industry communities emerging elsewhere in the United States outside of New England not long after, but that these were generally started as one-off projects by individuals hoping to become rich, rather than being launched in an enormous wave by a large group of very closely connected and already-wealthy investors who were pooling resources to promote rapid industrialization and further grow their wealth. He cites the book "Rockdale" by Anthony Wallace, which is some 400 pages long and which I've also started reading, for a contrasting picture of industrial textile development outside of the Boston Associates' influence. Specifically Dalzell mentions that these smaller millowners elsewhere were much less alienated from the production of their own factories and the processes slowly making them wealthy, or indeed from the millworkers, whereas the wealthy Boston Associates financing the New England mill boom were almost entirely disconnected from any processes, let alone workers, and they rarely if ever showed up at their own factories. They put up the capital and took home the profits, but they didn't directly supervise much in between; they just hired other people to do that. They were also perfectly happy for the American South to maintain the cotton slavery that was supplying their textile mills, even as everyone else around them became increasingly agitated about the need to end slavery. (Stay tuned for part 3 on that subject.) Overall, despite financing the explosive early industrial growth of the United States, the Boston Associates were quite conservative about maintaining the status quo, and as mentioned earlier that meant getting on board with the industrial revolution early, to be in control of it and to benefit from it, instead of being run over and devoured by it.

So let's dive in to the story of the Boston Associates and their businesses, today covering the first 4 chapters of the book. Despite how long this mini-series is going to be and how detailed my notes are, I have still greatly simplified the content of the book and pulled out aspects that I found most intriguing, compelling, or instructive. But it's a very readable book and I encourage everyone interested in this series to obtain a copy if possible and read it for yourself. One of the biggest simplifications I've made is to reduce almost all the names of the Boston Associates down to a few of the absolute most important figures, avoiding mentioning the rest by name, because that would be confusing in an audio format since a lot of them have similar names and you can't refer easily to the appendix table included in the book. Additionally, the feedback I got from Rachel when preparing this series was that people who aren't from Massachusetts or New England probably aren't going to recognize all the figures in this story by name in the way that many of us who grew up here might because their names are still everywhere. So off we go!

[3 chapters in part 1]

1. The British tour
    a. Francis Cabot Lowell took his family to Great Britain in 1810 and 1811, and he met up with his friend, Nathan Appleton, another member of Boston's international merchant class, although of slightly more modest origins. At the time, Britain strictly prohibited any textile worker from emigrating, in order to protect trade secrets of the new industrial textile loom machines. Similarly, it was illegal to bring related documents out of the country. Lowell plotted to gain access to and memorize the design of these new power loom machines so he could bring back the plans in his head to Boston and set up full-scale mechanized cotton textile production in the United States. This had already been done for one specific part of the process – the yarn spinning, but not the weaving – by Samuel Moses Brown and William Almy of Rhode Island in 1790. There were now spinning mills popping up around New England but no power looms to weave finished textiles from that cotton yarn. Lowell was not only aiming to memorize and import a design for this breakthrough technology, but he also seems to have had elaborate plans for how to implement it on a vast scale that would even outstrip the emerging English industry.
    b. It is unclear why Lowell had decided to enter the textile production sector specifically, since it was not apparently part of his lucrative mercantile activities previously, but he seems to have traveled to Britain explicitly with the objective already in mind. Although Lowell himself seems to have been quite financially

secure by the time of his two year trip to Britain with his family, especially because of his co-ownership of a major wharf in Boston, many of the Boston merchants were struggling mightily under the conditions of American independence during Britain's unending war with France. Business was very risky and time-consuming, even if some people were still making great profits. It was not a set-it-and-forget-it kind of way to accumulate wealth. He was eager to find some other means of making money that was more reliable and less nerve-wracking, and he had settled on textile production. Dalzell offers some speculation on Lowell's possible rationale (p.10): "Investment in manufacturing had the potential of paying regular returns, and unlike India Wharf, it could be expanded to accommodate additional capital. Also in time, if all went well, the day-to-day chores of management could be left to others. That would be especially true the more thoroughly routinized the business became. Given measured increments of capital, regular business practices, established markets, and above all the maximum use of machine technology, the result itself might become a kind of great humming engine, which could be kept in motion with nothing more than occasional adjustments."

c. Lowell and Appleton also wanted to make sure that if industrialization came to America it would not be the chaotic, haphazard form taking over northern England and stoking social chaos by the unmanaged disruption of livelihoods and immiseration of workers. So, the Lowell plan had to be more of an idealized experiment in order to maintain control over emerging industrial capitalism. This was not without precedent, because Dalzell notes that it is contemporaneous with other experimental, planned, utopian, rural textile manufacturing communities like those of Robert Owen. Lowell, however, was interested in stabilizing the status quo order, not fixing the world. Worker conditions were only important so far as they maintained social stability. Building factories in isolated rural areas was important only to keep them from defiling existing cities and keeping worker problems separated from the important people. England had allowed factories to spring up where the people already were concentrated, whereas Scotland had embraced building planned rural villages and resettlement of worker populations to work modern farms, fish, produce cottage crafts, or staff early factories.
d. Dalzell spends a great deal discussing the early 19th century social context of Scotland, home of the industrial revolution's technological development and the Enlightenment, where Lowell spent most of his two-year trip to Britain. Although he traveled to places like Manchester in nearby northern England to study the physical machinery, the social project of Scotland was also likely influential because it provided a model for Massachusetts elites to maintain their position despite poor farming capacity. Scottish nobles, who were socially elite but typically not very wealthy at the beginning of the 18th century, had taken a very strong interest in directing and rationalizing economic improvement projects to develop their own wealth and as part of those efforts had been keen on managing the transition in the laboring classes from peasant farmers to wage workers. "The society it produced was unmistakably different from the one that preceded it, but never so different as to threaten the power and prerogatives of the dominant class." (p.19) Dalzell acknowledges that textile weaving was not a big industry in Scotland at the time, however. But the model of the Scottish elite's purported long-term outlook and thoughtfulness about how to manage the labor transition might have influenced Lowell's master plan when he returned to the US. (There is no hard evidence one way or the other.)

2. The Boston Company of Waltham

a. The Boston Manufacturing Company was formed by a group of shareholding investors in September 1813. This was an unusual model for a sector that was otherwise owned by small partnerships or sole proprietors. The joint-stock model protected both the investors and the long-term investment, in that they allowed for greater abstraction of ownership shares so that individuals could quit the business or leave their holdings to heirs upon their death, without the business undertaking itself being disrupted by these changes in ownerships. (See also p.101) Over several years, these investors capitalized the company on subscription payment plans up to their goal number of $400,000 in money of the day, a pretty significant sum, of which the first $100,000 was used to build and fill brick mill buildings on the Charles River in Waltham, Massachusetts to house the power looms for textile weaving that Francis Cabot Lowell had designed from the plans he had memorized in Britain. The machines were built from these plans by his hired mechanic Paul Moody, whose name still graces one of the major streets in Waltham.
b. Dalzell argues that the equal innovation was not technological but corporate. Lowell's investor group drafted "Articles of Agreement between the Associates of the Boston Manufacturing Company" in September 1813, which pledged the business to both spin cotton yarn and weave textiles from that yarn, which was the first vertical integration of the American textile industry and even unusual by English standards at the time. This was part of Lowell's big plan when he was in Britain with Appleton. This choice explains the massive initial capitalization of the company, which Dalzell notes was many times larger than that of any mill in Rhode Island, where cotton yarn spinning factories had emerged. The unallocated starting capital was set aside with the express purpose of staging a huge expansion of operations as soon as the demonstration in Waltham would prove a success. The joint stock company was duly chartered by the state legislature with a public explanation of its plans and goals, including securing a manufacturing industry in the state.
c. Lowell hand-picked which investors would be able to purchase shares of stock in the company. They were all either past business contacts he could trust or family members by blood or marriage, or all of these. The first group of investors was just 12 men, holding 100 shares, of which half were held by family members. Three other prominent men held 30% between them, and then 5% were held by Lowell's co-owner at the wharf and another 5% were held by Nathan Appleton. There were also a couple other investors. When new shares were issued later, almost all 12 men bought these new shares, maintaining almost the exact balance of ownership with only a little dilution which allowed the mechanic Paul Moody to become the 13th investor on a more generous payment plan. A few of the original investors did not re-up or sold their shares to some of the others in the group.
d. The company decided from the beginning to specialize in manufacturing low-cost but durable and reliable textiles. Low-cost textiles were in high demand in the US but had been previously imported from British India's weaving cottage industry, often by Boston traders, and it was not always a good product that the American merchants could acquire. When the Napoleonic Wars and the War of 1812 ended, other American textile ventures struggled to compete with renewed British imports and began failing, while Lowell successfully lobbied Congress for a moderate tariff that would only partially discourage foreign competition, because the Boston Company was better positioned to thrive anyway because of their

vertical integration when all the other companies remained un-integrated within the supply chain of the textile industry.

e. Nathan Appleton's firm "B.C. Ward and Company" became the exclusive agent of Boston Company textiles, which it would sell to auctioneers for a 1% commission fee. This fee added up to a lot of money as the company ramped up textile production.
f. Labor force plans:
    i. Lowell did not want to hire paupers and orphans to work in his mills, which was the English model, and he did not want to hire unemployed farm hands from smallholder families, which was the model in Rhode Island at the time. These labor forces represented a potential threat to the existing social order, between their lack of education and their impoverished condition.
    ii. Therefore the company decided to pay extra for high-skilled men and then built strictly run boarding houses around the factory in Waltham and dispatched recruiting agents all across New England to fill all the unskilled jobs with unmarried young women.
    iii. The mill girls were paid by the piece, with room and board deducted at a low rate barely covering the cost to provide them, in cash twice monthly at a rate well above existing textile factories in the region. It's notable that they were paid by the piece, not by the hour, but this is something we've observed before as being a characteristic of the antebellum First Industrial Revolution period in the United States, which made it closer in form to the preceding cottage industry putting-out system of piecework production that transitioned the economy from whole-product craft work toward increasingly standardized and broken apart component work.
    iv. The girls were hired on a short-term basis (which was helpful for preventing the formation of a stable working class bloc or community), and they were supervised outside the factories so that they could enter the next stage of their lives, such as marriage, with prestige and respectability but also more than enough extra money saved up to have made it worth their while. No other occupations or cottage craft production at the time could compete with the amount of money these young women could make as mill girls for a few years. The cash payments and ability to save most of these payments were immensely important inducements because they were not company scrip, which was the prevailing model elsewhere.
    v. If a worker couldn't hack it, she was free to quit at any time and take her savings back home, and if she complained about conditions, the company was free to fire her at will and replace her with another girl off the waiting list.
    vi. The girls worked 12 hour days, six days a week, with no hearing or lung protection inside the mills.
    vii. Overall the company could have saved a lot of money on the labor side, but the Boston Associates invested in it believed in Lowell's vision of a version of industrial capitalism that maintained social stability and circulated money for greater purchasing power within the region, and this meant spending more on labor costs and recruiting the workforce more carefully.
g. In addition to selling the finished cloth the factories were producing, the company also decided to make and sell its machines to other manufacturers. By this point,

the stolen technology was out there and other companies were going to build similar factories. It made sense to at least sell them the machinery and machine parts and get some money that way if it wasn't possible to be the exclusive power loom textile manufacturer in the game.

h. In August 1817, Francis Cabot Lowell died, but the rest of the associates who owned stock in the company simply divided up the various operational and management responsibilities, with his brother-in-law Patrick Jackson serving as managing director for a salary and his friend Nathan Appleton undertaking the implementation of the strategic plan Lowell had devised. Continuing to invest the startup capitalization and with careful minor borrowing, they weathered the economic storms of the period after the Napoleonic Wars and War of 1812 where other companies across New England failed. In 1820, they expanded the charter limit for capitalization by another $200,000 and expanded the ranks of investors by another 7 men, not counting Lowell's heirs, while maintaining the control of the early investors. This use of stock issues to finance expansion avoided the need for major borrowing. They built a third mill in Waltham, since the first two were already humming along producing half a million yards of finished cloth per year, a product known as "Lowell sheeting," with sales of $260,658, reflecting steadily high demand. In 1822, when the third mill in Waltham began operating, dividends to shareholders hit 27.5% per year, although this was the peak outlier for the entire antebellum period. Unfortunately there was no more capacity in the Charles River in Waltham to support any further textile mill construction there. This led to the plans for the establishment of the new milltown that is today the City of Lowell.

i. The company's 14 investors in 1821, still very closely linked to each other by family and business ties, were nearly all wealthy enough already that they still had ample resources to pour in still more capitalization for an enormous expansion, where almost every other company would have tapped out or tried to stay in the game with a static production capacity. Moreover, these Boston Associates had not even begun to fully tap into their networks of potential investment capital by this point, and the company's success and dividends were so clear that they were not going to have any difficulty pulling in additional investors if needed. The only potential obstacle to this was that these business and family networks tended to be dominated by commercial importers, as many of them had themselves started out, and domestic manufacturing was essentially a threat to these people's livelihoods as import merchants, as was the tariff. But investing in the company was a pathway to switching sides, as the original group of investors had clearly managed to do, from struggling importers to idle manufacturing profit share owners. Manufacturing and industrial capitalism were clearly going to be the winning side. And the Waltham-Lowell system, seemed to be delivering on its promise of managing the transition to industrialization with a minimization of social breakdown and disruption. The Waltham neighborhood of the company's factories and surrounding worker housing and community buildings were clean, orderly, and free of impoverishment, all the while generating great dividends to the shareholders.

3. Expansion

   a. In 1821, the future site of the City of Lowell was a neighborhood of East Chelmsford with about a dozen houses at a 30 foot waterfall on the Merrimack River. By 1840, it was the state's second-largest city with 20,000 residents, including close to 8,000 factory workers employed by 9 companies with capitalizations well into the millions altogether.

b. A number of the Boston Associates in 1821, outside of their company based in Waltham, together bought control of the Pawtucket Canal around the Merrimack River's falls and secretly bought up all the parcels of land they wanted for their new venture. They then chartered a new joint-stock company called the Merrimack Manufacturing Company with a planned capitalization of $600,000, equal to the revised limit of the Boston Manufacturing Company. The initial shareholders were several of the original investors from the first company, plus some new relatives, plus Daniel Webster (once and future Congressman and later Senator). And there was a sharing arrangement with the original company so that they could share patents and their mechanic, Paul Moody. Altogether there were 27 investors at the beginning of the new venture in what was to become Lowell.
c. The company rapidly upgraded the canal and some road infrastructure, built a mill, built a machine shop, built worker housing, and established an Episcopal Church – although a number of the investors privately donated churches for various other denominations as well.
d. Operations began in September 1823 and the company had already doubled its capitalization limit to $1.2 million for a planned further 3 mills.
e. They set up a subsidiary corporation to deal with the machines and water power and any surplus land. This was called the Locks and Canals Company, and it handled agreements with other unrelated textile manufacturing companies interested in setting up shop in Lowell over the course of the rest of the 1820s and 1830s. The Locks and Canals Company would sell them land for their factories, lease them waterpower sufficient to operate, provide for all their machinery equipment needs, build the worker housing necessary to support these new mills, and even would build the mills for the companies and upgrade the infrastructure to reach them. "The Locks and Canals Company, ownership of which had passed to the stockholders of the Merrimack Company on a share-for-share basis, had thus assumed the function of selling what amounted to complete, prepackaged textile mills to groups of interested investors. This aspect of the development of Lowell – its dual nature, manufacturing *cum* real estate promotion – differentiated it sharply from the Boston Company." (p.49)
    i. The prepackaged factories and supporting services around them were each laid out like a college campus, including a quad. (pp.68-69)
f. If you're wondering how these other textile companies weren't undercutting each other competitively, don't worry because they each specialized in the production of a different type of finished textile product, which did not compete directly against the sales of the other companies based in Lowell. And I haven't mentioned the names of the companies here, to keep things relatively simple, but the names alone would make clear that they were all interconnected by investor ownership groups in some way or another. If a wealthy investor involved in Merrimack wanted to deepen their investments in the textile industry or had more friends and relatives to bring on board, they would simply launch their own new company, using the prepared package from the Locks and Canals Company and hiring their own day-to-day management team on salary. After that, however, the companies would operate independently and rarely acted successfully as a cartel together on anything, including wage-setting. Notably none of them ever attempted horizontal mergers or vertical supply-chain acquisitions and stuck to the original model they began with.

g. Financial activities and paperwork of the Merrimack Company were handled from the City of Boston, not on site in Lowell. Only operational management of the plants was actually handled in Lowell and most investors were uninvolved there.
h. By the 1840s, American-made textiles were now out-competing British textiles not only within the United States but across Latin America, Europe, and even Asia.
i. Plant expansions or machine replacements and upgrades by the textile companies in Lowell were funded by stock issues, generally not by long-term borrowing nor by reinvestment of profits. Instead the profits were overwhelmingly returned to the shareholders, which gave them a fairly steady real capital income as opposed to just paper assets, and helped attract future purchases of new stock issues whenever necessary. By 1842, for example, there were 390 shareholders of Merrimack. And when a shareholder wanted to sell part of his shares, the buyers were usually still within the close network and the proceeds of the sale were used to buy shares in some new venture, thus diversifying the investor's holdings while maintaining interest in the earlier firms.
    i. Although there were never any public trades open to any random buyer, there was still some speculative selling and buying of shares within the network, including some of the core investors. (p.60)
    ii. "For most large investors, the Waltham-Lowell system seems to have been a place to put money and keep it." (p.61)
    iii. Although higher profits could still be found in maritime commerce, textile manufacturing company shares provided a steady profit income for basically no effort or work for most of these investors. Global trade required so much more work and travel and risk. Buying shares in a solid company based in Lowell was the path to easy street for any wealthy Bostonian ready to retire, young or old, from the frantic merchant life. (p.64) Dalzell cites the diaries and letters of many of the Boston Associates commenting on their misery, anxiety, and depression of their original occupations as merchants and also cites many of these same men later rejoicing at their easier, happier, more fulfilled lives as idle rich investors and local philanthropists.
j. Banks tended to be unwilling to lend to early manufacturing companies anyway. This will come up later in more detail. (p.53)
k. "Thirty years after its founding, then, the Waltham-Lowell system remained the curious hybrid it had been at the outset: a strikingly modern combination of resources and techniques, yet one devoted to the support of a traditional group of public-spirited *rentiers*. Far from the production of wealth in the usual sense, the goal was the preservation of fortunes already made, positions already won." (p.67)
l. Labor unrest (p.68): Despite mounting pressure to speed up production and produce more work per worker, it really took until the mid-1840s, over two decades after the founding of Lowell and even longer since the first factory in Waltham, for the mill girls to begin organizing over workplace grievances. (Note: This is partly just because no one was successfully organized in the United States into labor unions until 1842, also beginning in Massachusetts. This was covered in our February 2021 Patreon episode on the origin of state labor laws in the First Industrial Revolution, which we just unlocked this month.)
m. Another contrast between this version of industrial capitalism and the rest of the competition:

i. “The truth was that the Waltham-Lowell system had few imitators, even in the textile industry. The use of the corporate form, the high rate of payout of earnings, the conservative financial policies, and the increasing resistance to innovation all remained highly unusual until after the Civil War. The major difference, however, was size. Most firms began as small, individual proprietorships or partnerships and depended on reinvested profits for capital. Such was the case, for example, in Adams, Massachusetts.” (p.70)
ii. “A few of the millowners of Adams eventually made modest fortunes producing textiles, but to a man they did so after, not before, becoming manufacturers. Just starting out on the road that had long since been traveled at Waltham in a single giant stride, they had everything to gain from change. Indeed the principal danger they faced was that too much of the old order might survive intact, not that too little would. The builders of the great mills at Lowell, on the other hand, were at bottom conservative. They may have been committed to change of a sort, but the broadest possible interpretation of that commitment would not have seen it as anything more than a very partial, and selective, affair.” (p.70)

[3 chapters in part 2 of the book, but only covering the first in part 1 of the podcast]

1. Transportation, banking, insurance
    a. The group of closely connected men who are today referred to retrospectively as “The Boston Associates” included over time and across a few generations about 80 wealthy investors with shares in 31 textile companies in the Massachusetts locations of Waltham, Lowell, Chicopee, Lawrence, Holyoke, and nearby Manchester New Hampshire. (p.79) By 1850, these textile firms were about a fifth of national production capacity. But by this point they had also branched out into other types of companies to help support their core investments in textiles.
    b. By 1847, 20 of the associates were directors at 6 Boston insurance companies covering 41% of Massachusetts marine insurance and 77% of Massachusetts fire insurance. By 1848, 17 of the associates were directors at 7 Boston banks controlling 40% of Boston’s banking capital. 11 associates were board members at 5 railroads in New England, some of which had the largest portion of stock held by one of the associates.
    c. Many of these investors held shares in and served on the boards of multiple different companies across these different sectors. Ebenezer Chadwick for example was invested in 4 textile companies and served on the board of the Suffolk Bank, the Merchants Insurance Company, the Massachusetts Hospital Life Insurance Company, and the Boston & Lowell Railroad. (Dalzell then recites, p. 80, a bunch of other examples of individuals with almost the same positions and investments but with different company names swapped in.)
    d. The 80 or so associates over time came from a relatively small number of families and were often intermarried between two or more of these families. The leading family groups with the most representation in the associates were: Appleton, Lowell, Lawrence, Cabot, Jackson, Brooks, Amory, Gorham, Dutton, and Thorndike.
    e. Generally (p.81-83) the associates organized nearly all their ventures, with a few small-scale exceptions that often came from their earlier merchant family days, as joint-stock corporations with state charters, which was unusual when they began back in the 1810s. Many of these early chartered corporations, whether the associates were involved or not, were essentially outsourced contractors for

the state (empowered with state-like authority) to build and operate transportation infrastructure privately or were granted monopolies to provide a certain service to the population. All of this was meant to keep taxes low.

f. Railroads:
    i. Thomas H. Perkins, one of the Boston Associates, built the horse-drawn Quincy [Granite Railway] in 1826, to carry granite blocks 3 miles from a quarry to a river, so that they could be transported to the site of the future Battle of Bunker Hill Memorial, which was itself a pet project of certain Boston Associates. This was a very successful demonstration of the freight potential of railroad technology and a number of new features of railroad design were invented for the project.
    ii. When the state began chartering the first railroads in the 1830s, to cross the state between Boston and Albany New York to link up with the Erie Canal traffic to and from the expanding old northwest, Boston associates were among the ranks of starting shareholders, after previously avoiding investments in transportation projects, which had typically had very low returns. (p.87) They also eagerly invested in the Boston & Lowell Railroad, which was begun almost entirely to ship textiles and raw cotton between those two cities, in competition with the Middlesex Canal. In 1835, it opened under the direction of one of the Boston associates, who ran a well-received inaugural roundtrip for the corporate directors in under 3 hours. All of the directors were also Boston associates. These 3 early railroads still struggled early on, both financially and in finding purchasers for stock issues, and the Boston Associates campaigned very aggressively to raise capital for them, including successfully lobbying for the state to make emergency stock purchases in one of them. Although some of these investors decided to cash out early, even at a loss, those who stuck it out eventually experienced comparable dividend payouts to their textile mills. All of them understood that even if the railroads themselves were risky investments in their own right, their successful completion would boost the profits of their core investments in manufacturing, which would be a net win anyway.
    iii. One new problem (pp.90-91) they encountered as railroad investors was that – unlike in the close-knit networks of investors in textile companies – they had to contend with the general public being able to buy or sell shares in railroads and speculate with those shares instead of the shares simply representing real and meaningful investments in the company's growth and development. These prices could fluctuate significantly based on developments in the news or legislature. The general public was vying for control of these railroads and their management, which was not under the unilateral control of Boston Associates, as they were accustomed to. This meant dealing with problems like railroad management embezzling money through kickback contracts to their other supplier companies or engaging in what we would now clearly identify as insider trading. Therefore the Associates mostly focused on the Boston & Lowell, which they did completely control and where the shares were out of the price range of casual investors, and their investments in the other railroads were primarily promotional in nature to try to get them completed but not to make money directly from those investments.

g. Banking:

i. For a general history of early American banking, you can listen to [part one of our five-part series on the history of American money]() from September 2021. Bear in mind that in this chaotic era, chartered private banks were issuing currency in place of the state, and they were each issuing their own currency, with no official clearinghouse process between banks. Meanwhile there was not enough hard coin in circulation.
ii. The Boston Associates did not love banking or bankers, but they did become involved in the banking sector because it was so important in the early United States that avoiding involvement was impractical for these first titans of industrial capitalism. By 1836, just before the banking-induced national Panic of 1837, Massachusetts had chartered 129 banks worth $38 million. (p.93)
iii. The Suffolk Bank, founded in 1818 in Boston by 7 Boston Associates and 4 other investors with a special purpose in mind, quickly became the de facto central bank of New England, not just Massachusetts, because it privately took on the role of collecting all the random paper money from rural banks all over the region at face value and sending out agents to cash that paper in for real coins at the issuing banks at any time. This forced those banks, kicking and screaming, to become disciplined about how much paper money they were printing relative to real assets, in case the face value promises were called. The Appleton family was heavily involved in the project and they were hardcore evangelists to the public of the Sound Money ideology that we covered extensively in our podcast episodes on the history of American money. The Bank would continue in this manner until the 1850s when it was outcompeted by a new rival bank established by rural interests, with formal state approval, against the Boston Associates, who were much more politically weak by then. (p.222)
iv. The textile companies themselves became a bit more dependent on access to short-term bank loans than they had been at the beginning. These bank loans, used almost solely to smooth out the annual business cycle but not for corporate expansion, replaced earlier credit arrangements between the manufacturers and their purchase or supply agents. When the firms were small, their transactional partners were willing to engage in purchases or sales on credit as they would for any small-time customer or business, which was the prevailing model all over the country in an era with poor cash circulation. But as the textile firms became huge, the sums of money involved, although small for them, were too large for their partners to defer. So, for example, a raw cotton purchaser needed to be paid promptly, since they had already paid their source for the cotton in a huge volume. But the mill wasn't necessarily flush with cash at that same point in the calendar, although they would be later, when they themselves got paid back by their textile selling agents after auctions, who were often waiting for small-time merchant at some general store to pay them back, and those shopkeepers were in turn selling on credit to retail customers who didn't pay promptly. Taking out a small loan from a commercial bank smoothed out these calendar issues. Some ran as short as just 30 days. The longest ran only 12 months. (p.97)
v. These loans were co-signed by officers or directors of the textile firms, so that in the unlikely event of a default, their personal wealth would be on the hook, but the banks knew that the companies were well-managed and

profitable and thus these short-term loans were very low risk anyway. Unfortunately, the loans could be recalled early, ahead of schedule, if the bank itself ran into trouble and needed to recover its funds suddenly. That would put the company investors at personal risk, and they did not want that. This was the genesis of their interest in sound banking practices and direct investment in and control over banks, especially via The Suffolk Bank, as previously explained.

  vi. In cases where longer-term loans were needed, the Associates' textile companies often turned to savings banks (p.100) who took money from ordinary depositors and lent it out to such borrowers as these reputable major companies at reasonable interest over longer periods.

h. Insurance:

  i. One thing we've wanted to talk about for a while is the rise of fire insurance in the early United States. It existed in major European cities like London already, but it was fairly rare in the newly independent United States. Community mutual aid tended to fill the gap. But the arrival of the industrial revolution to Rhode Island in the 1790s meant big buildings filled with extremely valuable equipment all prone to burn down at any time. (Textile mills in particular are quite flammable.) The Boston merchant classes were already very familiar with the benefits of insurance through their use of maritime loss insurance. The first attempt in the 1790s to start a fire insurance company in Massachusetts was planned to supply both kinds but ended up never getting around to fire insurance policy writing. By 1800, however, there was fire insurance available from another company, and others were set up not long after. Therefore, when operations began in Waltham, reputable fire insurance was arranged from the beginning. Here, however, there was a new twist: following the successful demonstration of Lowell's new system of textile manufacturing in Waltham, the fire insurance companies began dictating terms. New mill buildings, such as those erected in Lowell, would have to be constructed more expensively with an eye toward fire resistance and durability in order to avoid huge premium hikes.

  ii. Another interesting insurance vehicle also emerged in this period: life insurance and trusts for the wealthy to provide steady income to heirs without risk of the heirs messing up the businesses that had built the original fortune. The Massachusetts Hospital Life Insurance Company (p.100), even with a chartered responsibility to reinvest profits into Mass General Hospital, quickly amassed huge cash reserves in the millions from people's life insurance policy payments (which far outstripped both the payouts and the hospital costs) and these holdings needed to be invested somewhere safe and reputable – and on a large-scale. The company began acting like a bank as well, lending out significant sums from its investment fund, to well-managed major corporations controlled by the wealthy, i.e. to Boston Associates-owned companies, starting in 1826. By 1855, nearly half its fund was lent out to companies controlled by that network of investors. Because the insurance company was so big, it could make single loans larger than any bank at the time. A great deal of the investment reserves of the insurance company came from the Boston Associates themselves as customers of the life insurance and trust services on offer, with 79 accounts by 1830 from just 9 families in that network of local wealth. The insurance company's directors very carefully controlled the sale of shares in the company itself to ensure that the company's ownership and therefore management would never fall outside the inner circle of Boston's elite. Unsurprisingly, the directors were themselves heavily drawn from the ranks of the Boston Associates. These men and their colleagues were also putting up the collateral to endorse insurance company loans to their other companies. But they took the insurance company's investment strategy incredibly seriously to protect its capital principal above all else so that future generations would benefit. They were, however, a bit flexible and more generous than an unrelated lender might be on some of the loan terms, especially during financial crises, since they knew their own companies' books and management well enough to know there was little risk of losses. (One can imagine however that less reputable and steady businessmen might have exploited such an arrangement irresponsibly to their own advantage, but on the other hand they were also the leading insurance customers paying into the fund to begin with.) The insurance company did also make hundreds of loans to other non-textile companies, presumably with more normal conditions and terms.

1. Side note: There's an interesting fictionalized biography from 1956 for young readers called "Carry On, Mr. Bowditch" about Nathaniel Bowditch, the genius self-taught polymath sailor and mathematician from Boston. He eventually served as the first actuary of the Massachusetts Hospital Life Insurance Co. I read it as a kid, and it was fun.
2. Another important note: The Massachusetts Hospital Life Insurance Company was able to bail out a lot of Boston Associates connected banks during the Panic of 1837 and the Western Railroad during its troubles in 1843. The personal business connections within the network made emergency credit available to get through difficult times. Unaffiliated companies outside of the network often collapsed without this access. (p.109)

iii. Maritime insurance had traditionally been quite expensive and heavily focused on financial risk management. As the merchants of the Boston Associates networks transitioned into what proved to be a much less dangerous and much steadier way of making money – textile mills – there were far fewer insurance costs associated with their businesses and these ventures could grow much larger than they ever could in the maritime shipping game. (p.106)

i. Dalzell closes the chapter by observing that the Boston Associates never seemed to broaden their horizons beyond their textile industry – which itself only ever included spinning, weaving, and machine-making – and its narrow cluster of closely supporting banks, railroads, insurance companies, and real estate promoters. Their version of capitalism, or their imagination, did not extend to buying up more companies making the same thing or investing into other mass-produced goods, which is what ended up being the focus of the Second Industrial Revolution after the Civil War. In the 1850s and 1860s, railroads and oil companies were consolidating complex inter-state business empires and deploying cutting edge technology, as we've covered on so many episodes of our show. Meanwhile the Boston Associates, even in new generations, were still focused on shoring up, but not exponentially growing, their existing family fortunes and providing enough stable wealth for their descendants to live off

> comfortably without following them into the family trade. They stuck to their textile corporations, which had been legally and technologically innovative at the start, but they did not continue to innovate on either point, leaving that baton to be taken up by other unconnected and unrelated capitalists in other parts of the United States. Dalzell argues that it is no accident that the center of gravity for industrial capitalism's ongoing development shifted outside of New England by the mid-19th century, in part because so much wealth and capital was tied up in so few hands in closely-held and cautiously-managed corporations that were not constantly seeking to race ahead of the competition like the corporate founders, venturers, and financiers in other states. Industrial capitalism stalled out in New England … with the exception perhaps of the regions bordering New York where the approach was different, smaller to start, and hungrier. Those regions were more isolated from the influence and control of the capital concentrated in Boston.

(The podcast will cover the 2nd and 3rd chapters of the 2nd part of the book in separate episodes.)

The book's Epilogue covers the end of the Boston Associates period of the Industrial Revolution in the United States, with the panic of 1857, the start of the American Civil War in 1861, and the transition into the Second Industrial Revolution. Many of the businesses set up by these investors in the 1810s and the ensuing decades, both the textile companies and the supporting companies, failed during this crisis period. Too many mills, banks, and railroads had been built in the 1840s and 1850s. But that does not mean that their wealth was wiped out with the failures of certain companies. Far from it. They had all added so much to their existing wealth by that point and grown their already sizable families so large that everyone basically just moved on to bigger and better investment opportunities, if they had not already exited the local Massachusetts investment scene with their profits many years earlier to speculate elsewhere… But the Waltham-Lowell system was at an end, no longer on the cutting edge of industrial capitalism in the United States, which was beginning to enter its Interstate Commerce horizontal and vertical integration era. And although these investors would remain powerful political players permanently, they had begun in an era where few people could vote and there was little competition for buying political outcomes, and now they faced a much more democratic electorate and a much wider landscape of competing political donors with interests opposed to theirs. The wealthy elites of Boston were still the same families in the mid-19th century and well beyond as they had been in the early 19th century or well before then, and they were still at the top of the food chain, but they were no longer alone up there, and even more people would be joining them in the second half of the 19th century. They might not have fully embraced the never-ending drive to accumulate incomprehensible wealth like the Gilded Age tycoons that followed, but Dalzell observes that most of the systems of charity and philanthropy used to preserve, launder, and sanitize immense wealth were invented by the great families of the Boston Associates and copied directly, to the point of public name-checking, by Second Industrial Revolution magnates like Rockefeller. The final line of the epilogue chapter is "For better or worse, the world the Associates made is with us still."

Before I end part 1 of this series, I do have a couple stray notes.

Note 1: I can't really describe it in audio format, but there is also an appendix table in the book listing people by name, grouped by family, and selections of the companies they were each invested in, by sector. Some investors only invested in two or three companies total, while others invested in a dozen or more and served in various directorships or board positions. The families with members considered to be part of the Boston Associates were, in alphabetical order: Amory, Andrews, Appleton, Batchelder, Bond, Booty, Bowditch, Bromfield, Brooks, Cabot, Cary, Chadwick, Cotting, Crocker, Dean, Dutton, Dwight, Edmands, Eliot, Francis, Frothingham, Gardiner, Goodwin, Gore, Gorham, Hallet, Henshaw, Howe, Jackson, Kuhn, Lawrence, Lee, Livermore, Lloyd, Lowell, Lyman, Mills, Moody, Motley, Nichols, Otis, Parker, Perkins, Pratt, Prescott, Sargent, Sayles, Sears, Storrow, Sturgis, Thorndike, Tilden, Wales, Whitney, and Wolcott.

Note 2: Further reading – "Bibles, Brahmins, and Bosses: A Short History of Boston" by Thomas O'Connor (revised 2nd edition from 1984) - Chapter 5 examines the rise of the mill-owners within the Boston merchant elite. The economic summary is consistent with Dalzell's account and then the chapter moves on to focus on the interpersonal relationships of these businessmen through blood and marriage. O'Connor also seems to share the view that much of this transition was a managed one for the existing wealthy elites of Boston, who got to remain wealthy and powerful while containing the amount of disruption and smoothing out the huge changes of industrial capitalism and its discontents. He describes their turn toward Unitarianism as a pragmatic theological compromise between traditional Puritan values and Enlightenment Deism.

See also:
- https://en.wikipedia.org/wiki/The_Boston_Associates
- https://en.wikipedia.org/wiki/Waltham-Lowell_system
- https://en.wikipedia.org/wiki/Francis_Cabot_Lowell
- https://en.wikipedia.org/wiki/Panic_of_1857