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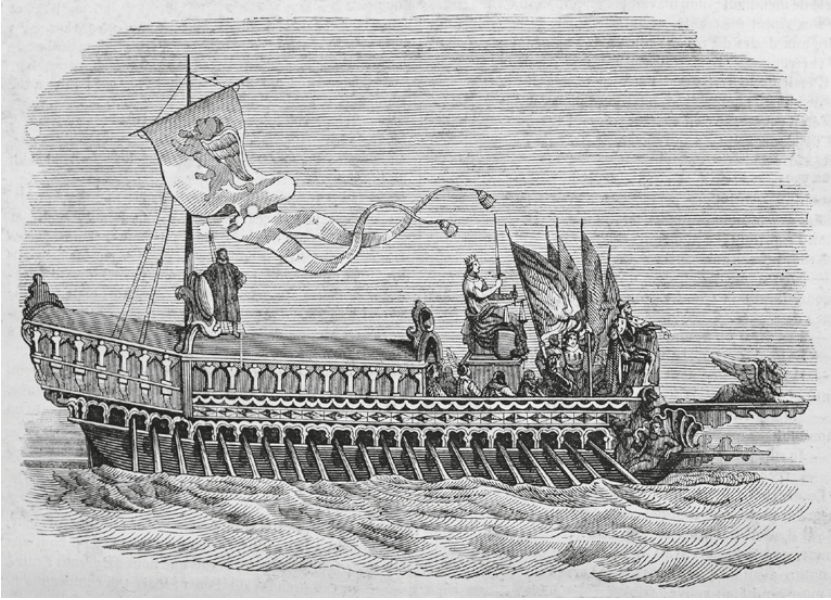
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Venetian Shipbuilding: Mastering the Mediterranean

In 1204, under the guise of the Fourth Crusade, a Venetian force sacked Constantinople, the capital of the great Byzantine Empire, greatly weakening it.¹ Despite their oath not to attack fellow Christians, crusaders under Venetian command looted, terrorized and vandalized the city for three days. They destroyed or stole many ancient Roman, Greek and Byzantine treasures. Among the stolen works were the famous horses of the Hippodrome, which were shipped back to Venice and today adorn St. Mark's basilica there. Crusaders also destroyed the great library of Constantinople. Additionally, they raped and massacred thousands of the city's inhabitants. Ironically, the Fourth Crusade originally sailed from Venice to protect Christendom (and Constantinople) from the Muslims. In effect, the assault on Constantinople greatly weakened the Byzantine Empire, led to its decline and probably contributed to its fall to the Ottomans two centuries later² (see Chapter 4).

Ironically, Venice was the western outpost of the Byzantine Empire, which gained its independence from the empire only in 814. An agglomeration of marshy islands, Venice lacked the landmass for agricultural produce, which was the primary source of wealth in those times. How did this relatively poor backwater grow to become the capital of an empire that ultimately brought Constantinople to its knees?

This chapter argues that innovations in shipbuilding and finance were primarily responsible for the rise of the Venetian empire from the eleventh to the fifteenth century. Venice

Figure 6.1 Venetian galley

Source: Marzolino/Shutterstock.com.

developed the technology for designing and efficiently building the Venetian galley, the most important ship in the merchant and military navies of the state (see Figure 6.1). The galley was built in the Arsenal, which at its peak could turn out about a galley a day (see Figure 6.2). The Arsenal was most responsible for Venice's rise as an empire, distinguishing the state from all other city-states in the Mediterranean. Merchant galleys carried its trade, while military galleys protected it against enemies. Financial innovations enabled risk sharing and triggered merchant entrepreneurship in trade. Trade was the other major source of Venice's wealth and power.

Between 1400 and 1450, at the peak of its power, Venice had about 36,000 sailors operating 3,300 ships. Venice handled trade between Europe and Asia in many goods including spices, silk, jewelry and cotton. At its peak, the Venetian empire (*Stato da Mar*) included parts of northern Italy (*Domini di Terraferma*) plus several colonies, including Istria, Dalmatia, Albania, Negroponte,

Figure 6.2 Venetian Arsenal

Source. Julia Panchyzna/Shutterstock.com.

Morea, the Aegean islands of the Duchy of the Archipelago, Crete and Cyprus.³ The Venetian empire established several key ports throughout the Adriatic Sea, including Alexandria, Tunisia, Thessalonica, Tripoli, Tyre, Athens and Constantinople. Their ships even traveled west to Barcelona and Valencia, and north to London and Bruges.

In addition to these ports, the Venetians had trade treaties with several foreign powers that added to their wealth. For example, Venice's economic relationship with Egypt, Syria and states on the eastern Mediterranean shore were tied to the Mamluks—the Islamic rulers centered in Cairo. The Mamluks were the middlemen between South and Southeast Asia and Venice, trading goods such as textiles, spices, precious stones and paper.⁴ Mamluk metalwork, with inlaid silver and gold, was exported to Venice and decorated homes both in the city-state and other parts of Europe. Later, the Venetians had trade relations with the Ottoman Empire. Although Venice competed with the Ottomans over territory, it generally sought peace for the sake of trade. The

Ottomans exchanged raw silk, cotton and ash for products from Venice's glass, paper and textiles industries.

This chapter describes first the innovations and then the drivers that contributed to the rise of Venice from a marshy set of islands to the dominant power in the Mediterranean and in global trade by the fifteenth century.

Venetian Innovations

Venice's most important innovations were shipbuilding and various financial innovations.

Great Galleys and the Arsenal

Venetians were traders and, like the rest of the Mediterranean, utilized a ship known as the galley to transport merchandise to and from the various ports of the empire. These large ships, distinguished by their long, slender hull, had sails but were primarily propelled by rowing. This allowed the galleys to move swiftly and precisely by depending on manpower, not the unpredictable winds or currents.

There were two main ways in which Venetian shipbuilding differed from its competition and predecessors. First, the Venetians revolutionized shipbuilding by creating separate galleys for trade and war, and constructing each differently from the past. Second, they established a government-run shipyard, known as the Arsenal, where the construction process was very advanced for its time and resembled a modern assembly line. Both these innovations are explained below.

The Venetians produced two types of galleys—the “great galley” (*galie grosse*), designed specifically for carrying goods on trading voyages,⁵ and the light galley (*galie sotili*) for war.⁶ The great galleys were invented between 1294 and 1298, and came into common commercial use within a decade.⁷ Both ships were initially very similar but diverged over time in proportions and rigging. The great galleys were developed to store goods and protect them from pirates. Various innovations enabled these ships to become massive, enabling them to carry a crew of more than 200 and weighing as much as 250 tons. The light galleys,

somewhat similar to the Vikings' longships, were tailored for war. The length of their hulls was eight times the width, and the deck was less than six feet above the keel. These proportions greatly facilitated speed and maneuverability.

Venetian galleys differed in construction from those of Venice's Viking and Byzantine competitors. The latter constructed the hulls of their ships by first binding heavier, overlapping boards to make a watertight hull and then supporting this planking by adding ribs and braces.⁸ A major Venetian innovation was to first construct the skeleton of the ship (the keel and the ribs) and then nail the planks to the frame.⁹

Research suggests that the development of this "rib and plank" construction required several innovations. This method of building had previously been used only for river-bound vessels. Adapting this method of construction for use in the open waters of the Adriatic and Mediterranean Seas required a lot of experimentation.¹⁰

The construction of the skeleton had several benefits. First, this form of construction dramatically reduced the cost of shipbuilding. It required less skilled carpentry and ultimately used less wood.¹¹ Second, the ships could be easily repaired and cracks easily filled. A mixture of fiber and pitch allowed for the creation of a watertight hull—one that was cheaper to produce but just as seaworthy as its predecessors. The abundance and strength of these galleys enabled the Venetians to fend off pirate attacks and ensure that goods arrived at their designated ports.

The other major Venetian innovation was the development of the *Arsenale Nuovo* around 1320 from the older *Arsenale Vecchio*. While previously used to maintain ships, the *Arsenale Nuovo* was built and allowed for the construction in one place of both the states' navy and merchant ships. This state-run shipyard was the base for the mass production of Venetian galleys. The workers in the Arsenal were highly skilled and specialized in various areas of shipbuilding, enabling great efficiency. Work was organized into three stages of production, each developing its own guild: the shipwrights, the caulkers and the oar makers.¹² The shipwrights (*marangoni*) produced the "live work"—the keel, ribbing and frame of the ship.¹³ The caulkers (*calafati*) fastened the planks to the frame, built other super structures and filled in (caulked)

any open seams. The oar makers (*remeri*) produced the oars for the galley. These specialists worked with smaller specialties to arm the galleys and attach the rigging. This standardization and division of labor allowed for the rapid production of ships. At its peak, workers in the Arsenal could efficiently construct ships at the rate of one galley in less than a day.¹⁴ At any given time, the Arsenal aimed to keep a reserve of 100 light galleys and 12 great galleys.¹⁵ In addition to ships, the Arsenal also produced weapons of war, including in later years, gunpowder weapons. The speed and organization of construction in the Arsenal surpassed that of any competing nation or state, making Venice the foremost naval power in the Mediterranean and in global trade until it was displaced by the Portuguese (see Chapter 7).

Between the thirteenth and fifteenth centuries, Venice's merchant and military navies enabled it to dominate trade in the Mediterranean, colonize Mediterranean ports and islands, and bring immense wealth and prestige to the city-state. It also enabled the state to attack and briefly occupy Constantinople, the seat of the Byzantine Empire, of which Venice was at one time merely the westernmost colony.

Financial Innovations

Venice's primary source of income was its trade between Europe and the Byzantine Empire, whose capital was Constantinople. Through Constantinople, Venice had access to the goods of the East, including silk, cotton, jewelry and spices. An important aspect of this trade was the risk involved in shipping in those times. The round trip from Venice to Constantinople would take about three months.¹⁶ If successful, such trips incurred considerable profits. At the same time, such trips also incurred considerable risks.¹⁷ First, they required a large amount of capital to finance the ship, crewmen and goods. Second, along the way, voyages could incur pirates, travel hazards and delays, which could mean partial or total loss for the merchants involved in trade. Third, such trade involved buying goods on credit, with no guarantee of returns. The collateral, in the form of goods, left port with the ship. As a result, an agency problem emerged because the residing merchants

had to trust the traveling merchants, who could abscond with the goods for a one-time gain.

To resolve these problems, Venice established an innovative contract, called the *colleganza*, which was a first in the Mediterranean countries and Europe.¹⁸ Features of this system became a precursor to the subsequent limited liability company that characterized business development in the Netherlands, Britain and other parts of the world (see Chapter 8). The contract specified two agents: the residing merchant and the traveling merchant. The residing merchant provided the capital for the goods and received a share of the profits. If the contract was unilateral, the residing merchant received 75 percent of the profits; if it was bilateral, the residing merchant received 67 percent of the profits.¹⁹ The traveling merchant undertook the risks of the journey and the responsibility for its completion, earning the remaining share of profits. The residing merchant's risk was limited to the value of the goods. Losses beyond the goods were borne by the traveling merchant.

The *colleganza* split the risk of trade between a residing merchant and a traveling merchant. The residing merchant was typically someone wealthy enough to finance the trip and run the risk of losing all his investment for at least a huge profit. In contrast, the traveling merchant was someone who, though poor, was willing to undertake the risky journal and ensure its safe completion. If the trip was successful, the reward was substantial without any investment of capital. Successful traveling merchants, after accumulating sufficient wealth, could then rise to the class of residing merchants.

The technological and financial innovations allowed Venice to become the major trading center in Europe and the Mediterranean from 1000 to 1500. Without the shipping innovations, Venice would not have had the merchant ships to carry the trade, and the military ships to defend against pirates and competitors. Without the financial innovations, Venice would not have had the sharing of risks and the incentivization of merchant entrepreneurship. Thus, these innovations enabled Venice to amass great wealth, becoming, by the fifteenth century, possibly the richest city in Europe.²⁰

Drivers of Innovation

Three institutional drivers played a key role in the advances made in Venetian shipbuilding and financial innovation: competition, openness and empowerment.

Empowering Innovators and Merchants

Several critical events between 1000 and 1200 triggered the empowerment of the merchant class in medieval Venice.²¹

In the early ninth century, Venice was the western corner of the Byzantine Empire. In 814, as a reward for help in countering the Carolingian empire, the Byzantine Empire granted Venice independence, with a doge as ruler. For the first few centuries after that, the doge was a monarch of unlimited powers. Selection was partly hereditary, as the doges came from just three families.²² However, in 1032, due to prior political unrest, a wealthy merchant was elected doge, bringing an end to the system of hereditary doges from a few privileged families. Moreover, their powers were increasingly limited. As trade became a driving force in the economy of Venice, the power of merchants rose with respect to that of the doge. This in turn led to laws that encouraged trade and the amassing of even greater wealth and power for the merchant class.²³

In 1082, in return for the Venetian military support in fighting the Normans, Constantinople signed a treaty, called the Golden Bull, with Venice. Among other concessions, this treaty let the Venetians (1) trade throughout the Byzantine Empire without taxes; (2) control the main harbor facilities of Constantinople, with control of several public offices; and (3) define a trading district within Byzantium, for shops, a church and a bakery.²⁴ These concessions greatly enhanced Venice's trading advantage relative to its competitors in Italy and the Mediterranean. It triggered the steady increase in wealth and power of the traders in the Venetian Republic.

In 1172, Doge Vital II Michele headed an armada to battle Constantinople and press for the release of hostages. That expedition not only failed but also was blamed for bringing back the plague. On his return, the Doge was assassinated and a new

constitution was written, empowering an elected parliament called the Great Council. In the next couple of decades, three major changes made Venice more egalitarian. First, the doge had to be elected by members of the Great Council. Second, upon his election to office, the doge had to take an oath not to expropriate state property or to preside over cases against himself. Third, in all major matters of state, the doge had to consult with a six-member Ducal Council, which itself was elected by the Great Council.

These institutional changes empowered innovators and fostered numerous innovations. In particular, the two centuries after 1082 witnessed the enactment of numerous financial innovations including the *colleganza*, primary markets for debt, secondary markets for debt, equity and mortgage instruments, bankruptcy laws, double-entry accounting, deposit banking and a reliable medium of exchange (the Venetian ducat).²⁵ These innovations, in turn, further encouraged trade, brought new entrants into the merchant class (thereby facilitating the empowerment of individuals through social mobilization) and generated great wealth for individuals and the state.

Most importantly, the merchant class was, initially at least, not restricted to the rich and the privileged. It was open to those willing to take the risk of becoming a traveling merchant. As a result, the *colleganza*, which democratized risk and the opportunity to become wealthy, further increased the empowerment of entrepreneurial individuals. Due to it, “the riskiness of trade together with the widespread involvement of Venetians in this trade, created a great deal of income churning—mostly rags to riches but also some riches to rags.”²⁶

Intense Competition with Trading Rivals

Intense external competition with trading rivals fueled Venetian innovations, especially in shipbuilding. Venice depended greatly on trade and in turn on the power of its navy. It competed fiercely in trade with its principal Italian rivals Genoa, Pisa and Amalfi.²⁷ Venice’s naval prowess caused it to win the favor of Constantinople. After defending Constantinople from an attack by several powerful Carolingians, Venice received the favorable trade treaty—the

Golden Bull—in 1082 (see prior section). The treaty allowed the Venetians to establish a Venetian colony in Constantinople itself (the first foreign state afforded this privilege), effectively blocking its rivals from trading within the city.²⁸ In effect, the treaty gave Venice a monopoly on trade within Constantinople, shutting out its rivals Genoa, Pisa and Amalfi. The relationship between the two states ended, however, in 1171 when the Venetians' desire to monopolize trade started a riot—a protest of the extension of trading rights to Pisa and Genoa. The Venetians were expelled from Constantinople. In January 1183, the emperor of Constantinople allowed the Greeks to massacre the remaining Italians in the city (namely Genoese and Pisan citizens) as a way of repaying his supporters. In doing so, the emperor started a war with the Pisans and the Genoese. With Constantinople's other enemies, the Normans, arming themselves, the emperor had allowed the Venetians to reenter the empire and take over the Venetian quarter in exchange for protection. However, upon return, their special privileges were revoked.²⁹

The reentry of the Venetians into Constantinople was followed shortly by a call by Pope Innocent III to launch a crusade into Jerusalem. The pope and his allies in France and Spain approached Venice to request a vessel to transport soldiers into Jerusalem. The pope sent envoys to request Venetian assistance for two main reasons. First, Genoa and Pisa, the other two states with naval capabilities, were at war with one another and unable to help a crusade.³⁰ Furthermore, Venice had assisted the papacy on a crusade in 1121, and Pope Innocent hoped that the newly appointed doge, Dandolo, would be equally willing to help. The doge was the elected ruler of the Venetian republic. Under the fiscally shrewd doge's guidance, Venice agreed to join the crusade for monetary purposes, aiming to earn an enormous amount of money for their other projects. In addition to promised payments from the crusaders, the Venetians hoped to wipe out middlemen traders in Cairo and Alexandria, creating a monopoly of trade in the eastern Mediterranean and eliminating competition with Pisa and Genoa.

Thus, innovation in Venice's shipbuilding industry—specifically that which increased the agility and war capabilities of its ships—was motivated by a desire to beat out its trade

competition. Venice's warships included flying bridges that could be launched up out of the ship as a means for breaching walls. These bridges were later employed against Constantinople as a means of recovering lost investment when the crusaders could not pay for the ships they ordered. The crusaders and the Venetian victory over Constantinople allowed the Venetians to dominate trade in the center of the former Byzantine Empire, and the Venetians' strong galleys ensured that their wares were protected.³¹

Through the years, Venice's biggest competitor was Genoa, a fellow Italian city-state. Just as Venice was somewhat isolated from the Italian mainland by its lagoons, so Genoa was separated from the Italian mainland by a wall of mountains. The rivalry between the states dated back to at least the thirteenth century. Though Genoa was slower to expand than Venice, it was equally invested in trade in the Mediterranean. Four open military conflicts occurred between the two states. The last of these Genoese wars, also known as the War of Chioggia, was a victory for Venice. Both states' naval fleets and economic resources were seriously depleted, as demonstrated by Venice's generous concessions in the Peace of Turin—between Genoa and Venice in 1381—that brought the war to a close.³² However, because of strategy, efficient shipyard production and the prioritizing of certain trade routes, Venice was able to recuperate and reconstruct its fleet. The reconstruction enabled Venice's ultimate success over the Genoese fleet and its ability to be the preeminent trading power in the Mediterranean.

Another of Venice's almost constant competitors was the Ottoman Empire, as early as 1300.³³ The Ottoman Turks had previously challenged Constantinople, and, when Venice took over several of Constantinople's ports in 1328, the Italian city-state inherited this rivalry. The Ottoman Empire continuously expanded over the Balkans, and, for a period, it looked as though all Aegean ports were going to be occupied by the Turks.³⁴ The Ottomans had yet to develop a navy, and most of their attacks on these port cities were overland. Many Greek states, fearing Ottoman attacks and acknowledging their inability to defend themselves, willingly offered seaports for sale in exchange for protection by Venice. By increasing the sizes of their fleets, purchasing sea ports and making treaties with the purpose of delaying armed conflict, the Venetians were able to expand their control of the Aegean Sea.³⁵

This strategy worked until about 1470, when the Ottomans constructed a fleet and attacked Venice's main base in the Aegean Negroponte. In 1479, the Venetians surrendered to the Ottomans, turning over Negroponte and a couple other Aegean islands. This battle marked a turning point in Venetian maritime history—while they were still an active presence, they no longer dominated the seas and no longer “held the gorgeous East in fee.”³⁶ Especially after the Ottomans formed an alliance with the Barbary pirates, Venice was unable to maintain a navy that could overcome the Turks.

Openness to Diverse Peoples and Traders

From early times, Venice was a relatively open city, while religious dogmatism, persecution and parochialism were common across contemporaneous Europe. The Venetian city-state was founded as a safe haven for people escaping persecution in mainland Europe after the fall of the Roman Empire.³⁷ During the period of its rise, Venice was a fairly open city-state. Because it was a state that depended on trade, Venice was fairly welcoming to foreign merchants, financiers and workers. The Venetian government made provisions for housing and protection for merchants operating in its domains. Except during wartime, the state even allowed the ships of its competitors, including Genoa, to enter port at San Nicolo,³⁸ in Venice. Due to Christian teaching, money lending was considered unchristian, and some Jewish financiers were allowed to operate in the city.³⁹ The Republic taxed the Jews and, in 1516, restricted their living quarters, thereby creating the first ghetto. However, the fact that German, Spanish and Levantine Jews came to Venice, in the fourteenth and fifteenth centuries, indicates that Venice's level of tolerance of Jews was perhaps higher than in other European cities.⁴⁰

Venice's openness was also due, in part, to its need to replenish its population following outbreaks of the bubonic plague. The first epidemic was in 1348. In each of these epidemics, large portions of Venice's population were wiped out—each of these epidemics killing approximately one-third of the population.⁴¹ Because of the dramatic drop in population and the need to maintain a workforce, the Venetian government encouraged

immigration to revive business. Most immigrants came from the Italian mainland, but sailors and seamen from Greece and Dalmatia also migrated there. These workers became thoroughly Venetian, and the skilled workers were rewarded with citizenship. Immigrants could obtain citizenship in two stages, subject to certain conditions.⁴² After 10 years they were entitled to partial citizenship, and after 25 years they could get full citizenship. Noncitizens had rights according to the guild they belonged to and their rank in it.⁴³

The story of Zaccaria Stagnario is an example of the openness to foreigners and the empowerment of people in Venice.⁴⁴ His grandfather was a Croatian slave who was freed when his Venetian owner died. His father was a helmsman. In 1199, he traveled in a *colleganza* to Constantinople, which yielded a big payoff. By 1206, he held office as a counselor to the first Venetian podesta in Constantinople and was rich enough to be a residing merchant in two *colleganzas*. He was welcomed into the ruling elite, and his descendants served in the Great Council in nearly every session from 1261 to 1295.

Another person highlighting the openness of the Venetian spirit was Marco Polo (1254–1324), a Venetian merchant and traveler. He is famous for his trip to China to explore the source of the goods that Venice traded in. Accounts of his 24-year travels sparked Venetian and European interest.

Venice developed an information network with an inspection system that controlled movement in plague-infested areas, preventing the plague from spreading to other parts of the city. So doing, made the city-state a haven for people in other parts of plague-infested Europe.⁴⁵ The benefits of citizenship, the compensation and rewards of becoming a craftsman, and the escape from the bubonic plague in other parts of Europe all led to an influx of immigrants and talent. Venice's shipbuilding during most of the 1400s produced a number of important Greek and Dalmatian shipwrights and designers.⁴⁶ However, this situation changed dramatically by the seventeenth century when Venice's government barred foreign shipwrights and limited foreign visitors, as Venetian citizens were "more inclined toward love of their fatherland."⁴⁷ Such a change may have also contributed to Venice's decline (see later subsection).

Meritocracy and the Empowerment of Individuals in the Arsenal

Because of the importance of the Arsenal, the Venetian Senate regulated the recruitment, training, work and promotion of individuals to ensure innovative and high-quality output. Initially, the artisans enrolled in the Arsenal were strictly limited, with only a few enjoying the right to work in the shipyards when they pleased. Later, this policy was made more liberal. The regulation of employment in the Arsenal established a meritocracy for work and promotion. The state appointed a group of lords and commissioners (*patroni e provveditori all' Arsenal*) to run the Arsenal and supervise the munitions, maintenance and construction branches.⁴⁸ The lords and commissioners were frequently changing, only in office for one to four years and were frequently men of naval experience. These lords and commissioners appointed foremen—one for each of the main areas of production, carpenters, caulkers, mast makers and oar makers. The foremen were all masters of the craft that they supervised.⁴⁹ Each year, the master craftsmen were reviewed to evaluate their performance and determine wages and promotions.⁵⁰ These four foremen worked alongside approximately 30 other “gang bosses” to manage production. The gang bosses were frequently selected based solely on training and shipbuilding skills. When one position became available, all interested masters were invited to partake in a competition to demonstrate their skills in a formal examination.⁵¹

While these competitive examinations took place, they were infrequent for foremen positions, namely because shipbuilders were rarely considered for foremen's posts until their expertise was firmly established in the Arsenal.⁵² Applicants for top offices chosen to partake in foreman examinations were frequently responsible for innovations or ideas that expedited the shipbuilding process.⁵³ Candidates for high-level foremen positions were also distinguished if they had experience beyond the Arsenal's walls. For example, before completing his exam, Zorzi di Christofolo had spent almost no time in the Arsenal. Chosen to become the foreman of the oar makers, he had spent over 20 years working with the navy.⁵⁴ Foremen positions were also open to younger individuals, again emphasizing the importance of expertise and the ability to take an active hand in construction even at the

foreman level. An example of this was Zuane Luganegher becoming foreman shipwright at only 24.⁵⁵ The reasoning behind this was that younger foremen were in their “creative prime,” so hiring them prevented technical skills and ideas from being out of date.⁵⁶

Decline

The most critical driver of the decline of Venice was the Portuguese caravel, which obsoleted the Venetian galley (see Chapter 7). In 1498, the Portuguese, led by da Gama, sailed around the Cape of Good Hope at the tip of Africa to reach India. He did so with the help of the caravel, an innovative Portuguese ship that relied on sails rather than oars for propulsion. In contrast, the Venetian galley depended primarily on oars rather than sails for propulsion. This change in innovation had a dramatic impact on the fortunes of Venice. Previously, Europe imported goods from China and India through Venice. The main imports from Asia were spices, cotton, silks and jewelry, which were then exported to Europe. The imports from Europe were woolen products, metals, salt, books, wine, wheat and millet, which were then exported to the Muslim world and Asia. Venice’s own production and exports included ships, arms, silk products, mosaics, draperies and glass.⁵⁷

Venice relied on numerous middlemen over land and sea routes in the Byzantine Empire, Syria, Turkey, Egypt (Mamluks), Arabia and the Mediterranean and Arabian Seas. All these middlemen added time, costs and uncertainty to the trade. Uncertainty also arose due to the vagaries of weather and storms, the wars, the pirates and thieves, and the change in regimes. Da Gama’s sea route to India eliminated all these middlemen. Thus, it reduced costs, shortened time and increased reliability in trade. Venetians understood that they had acquired their wealth and power by trade between Europe and Asia. All of this was now jeopardized by Portugal’s sea route to India and the East.⁵⁸

Moreover, this Portuguese discovery rendered the primacy of Venice obsolete. In fact, not only did Venice suffer from the cutting of middlemen, but also the entire cross-Mediterranean trade network suffered greatly as soon as the Portuguese activated the new trade route. In 1511, the Portuguese conquered Malacca on the Malay Peninsula, also known as the Spice Islands. Tome

Pires, a Portuguese adventurer, commented, “Whoever is lord of Malacca, has his hand on the throat of Venice.”⁵⁹ This dramatic change was brought about by the Portuguese innovation of the caravel, an ocean-going ship that obsoleted the Venetian galley (see Chapter 7).

Venice’s failure to foresee and develop the sea route to the east may be partly because it had over invested in the Arsenal and the galley and partly because the forces that led to its rise, openness, competition and empowerment, were in slow decline in the fourteenth century. With Venice’s rise, wealthy merchants acted to gradually change the laws in the republic to restrict membership into the ruling class to an increasingly small group of elites, who accounted for less than 10 percent of the population. These changes in laws limited entry of new merchants, entrepreneurship and competition.⁶⁰ Moreover, over time, new Venetian regulations from 1376, 1476 and 1483 further limited and eventually forbade any non-Venetian from engaging in commerce with the Ottoman Empire, including Ottoman citizens residing in Venice.⁶¹ Earlier in its history, entry and competition were the primary drivers of the fertile climate of innovation and economic progress that marked the rise of Venice. New restrictions hindered free entry and competition and with the decline in these drivers, innovation suffered. The wealth of the merchant class blinded them to the drivers of that wealth. In a myopic turn, the merchants shut down the drivers of their wealth, competition and the empowerment and acceptance of newcomers. As a result, subsequent innovation and progress suffered. Realizing its rapid decline and the increasing dominance of Portugal, Venice reinstated partial privileges to foreign merchants in 1524. Realizing that these merchants were an important source of income to the state, further actions to reinstitute the previously forged privileges continued until the 1600s.⁶²

However, these changes were too little and too late. Portugal and not Venice developed the caravel to exploit the sea route to the east. Portugal innovated where Venice failed, reaping the enormous fruits of that innovation (see Chapter 7).