



REMBRAND KONING
ALICIA DADLANI

Framebridge (A): Reimagining Custom Framing

On a crisp morning in December 2018, Susan Tynan, founder and CEO of the online framing startup Framebridge, walked the floor of the company's high-tech manufacturing plant in Kentucky. It was peak season, and there was a flurry of activity in the plant. Small robots glided along the concrete floor, carrying materials on upright racks to the framers, while larger robots scanned shelves for inventory control. However, several of the robots were not working properly, causing inventory buildups and production delays that Tynan knew would lead to unhappy customers. Further, the night before, she had received an unexpected email from Tim O'Shaughnessy, one of her first investors and staunchest supporters, that left her with a sinking feeling in the pit of her stomach. While he applauded the strong demand for the product, he was starting to express doubts about the strategy, and even hinted at concerns about the company's long-term viability.

Framebridge was founded in 2014 with the goal of making custom framing easy, transparent, and affordable. Traditional custom framing stores offered customers a dizzying array of choices, had high markups, and lacked transparent pricing, resulting in frames costing hundreds to thousands of dollars. Tynan saw an opportunity to revolutionize the \$4 billion industry by leveraging digital technology and automation. For half the price of traditional retail stores, customers could choose from a selection of high-quality frames online and mail in their artwork, receiving it back a few days later, ready to hang. By making framing affordable, Tynan believed she could both take market share and expand the category.

Since its founding, Framebridge had raised over \$65 million in venture funding and hired a team of over 200 people. Annual revenue had grown to over \$20 million, and the company had nearly 100,000 customers, over one-quarter of whom were first-time framers. In late 2018, the company opened two physical stores to test a retail strategy. However, despite strong consumer demand, the company still struggled to achieve economies of scale in operations and had yet to break even.

Tynan knew she could not continue to raise funds indefinitely. Framebridge needed to reach profitability soon, or it would not survive. Central to its strategy was scaling operations to achieve cost efficiencies in manufacturing. She had to determine the right path forward. Would doubling down on automation achieve operational goals, or did the company need to rethink its vision? Would developing a retail strategy propel brand awareness or add unnecessary complexity and cost? Her investors' patience was wearing thin. She knew that she had to find a path to profitability to survive.

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Brief Background on Custom Framing Industry

Modern picture framing originated in 12th century churches, where frames first appeared as immovable architectural features adorning paintings. During the Italian Renaissance of the 15th and 16th centuries, framed art expanded to the homes of wealthy nobles who commissioned and displayed artwork in their estates. Over the following centuries, art collections flourished, increasing the demand for and variety of styles of picture frames. Builders began designing and crafting frames to match consumer preferences, which ranged from ornate, gilded frames to simple, modern styles. Over time, framing stores began emerging all over the world.

To custom frame, most framing shops required customers to bring artwork to their stores, where customers met with a skilled framer to select framing options. Customers selected the frame **molding**, which was often made of wood or metal and could include premium finishes and designs; **glazing**, a UV protective barrier, often glass or acrylic, that prevented artwork from fading; and **matting**, acid-free decorative mats that served as a protective barrier, separating the art from the glazing. A typical custom frame shop offered over 2,000 moldings and hundreds of matting options, creating a plethora of choices for consumers. Depending on selections, prices for framing a single piece of art could range from a few hundred dollars to a few thousand dollars.

U.S. custom framing was estimated to be a \$4 billion market and was highly fragmented, consisting of a few large, national retail stores such as Michaels and Hobby Lobby, and nearly 6,000 mostly single-location, owner-operated enterprises (see **Exhibit 1** for industry snapshot).¹ In recent years, online poster and art businesses and national retailers like Michaels began offering online framing services, increasing pressure on traditional mom-and-pop framing stores.

The largely owner-operated U.S. picture framing store industry consisted of custom framing (70%), ready-made frames (14%), photo frames (11%), and crafting supplies (5%).² Custom frames were special-ordered in small batches from wholesalers and could be made in any size or style. Unlike custom framing, ready-made frames were produced in standard sizes and limited colors. Photo frames were also ready-made, but were smaller and intended for tabletop display. Facing headwinds both from changing consumer tastes and increasing competition from online retailers, picture framing stores industry revenue declined from 2012 to 2018 at an average annual rate of 1.2% to \$2.3 billion, while the number of picture framing stores declined from 7,500 to 6,000 stores (see **Exhibit 2** for trends).³

Founder's Journey

The daughter of a tugboat operator on Lake Erie, Tynan grew up in Cleveland, Ohio. "Our family revered his work. He was 'always on,' and we understood that is what running a business required," Tynan commented. From an early age, Tynan knew she wanted to lead a company.

After receiving a bachelor's degree in English from the University of Virginia and an MBA from Harvard Business School, Tynan worked for startup companies in Washington, DC, before joining the Obama White House in 2009 as a management advisor on technology and customer service. But after two years, she rejoined the startup world as head of business development for LivingSocial, an online marketplace for daily deals. However, as growth softened, Tynan felt her personal development slow.

"I started feeling an urge to run something," Tynan said. "However, we had two children under the age of five, so it was a challenging time to start a business. We were two working parents and needed the income to pay mortgage and childcare expenses." Thinking that working for another startup would satisfy this desire, Tynan joined Taxi Magic, an on-demand taxi-hailing service, in 2013. She noted,

“Shortly after joining, I realized I really wanted to do my own thing. That feeling could not be sated in another way.” After seven months, Tynan left to start her own company.

Founding Framebridge

Tynan’s business idea originated nearly a decade prior, after she framed four National Parks posters she bought during a hiking trip with her sister. Tynan reflected:

I took them to a custom frame shop, and after an overwhelming number of options and surprise charges, I begrudgingly paid \$1,600 to frame the set in clunky metal frames I did not even like. I loved those posters and the memories of our trips together, but I thought a lot about what a negative experience I had framing them. I avoided custom framing after that, refraining from buying art or photos that I would need to frame. On a trip to Morocco, I stared at a print I loved and thought, ‘I can’t buy it; I’d need to frame it!’ I realized how crazy that seemed and that other people must be frustrated, too.⁴

Tynan’s vision was to make custom framing more accessible and, by doing so, expand the \$4 billion category. Tynan believed prices had to be markedly lower for consumers to change behaviors and begin framing more items. Rather than having a storefront, Tynan wanted to build an online custom framing store that charged half the price of retail stores and had transparent, upfront pricing. Customers would choose from an online selection of around 30 frame and mat styles, and the company would send them postage-paid packaging to ship their art. After a few days, customers would receive their custom-framed art, ready to hang.

Tynan realized she had one problem – she knew nothing about framing. So, in 2013 she signed up for a day-long course at a local hotel to learn framing basics. Then she traveled to Las Vegas to a trade show to learn more and connect with industry vendors. Rather than work surreptitiously, Tynan told family, friends, and everyone she met about her idea because “it was essential to validate the concept.”

Customers faced potential tradeoffs to frame online. No longer could they talk face-to-face with framers who would be assembling their completed artwork, or touch samples of the mouldings. Customers needed to make design choices online. Additionally, they had to believe Framebridge and third-party logistics companies would not lose or damage their often one-of-a-kind, sentimentally valuable artwork and mementos. However, based on her conversations with friends and family and her belief that millennials preferred e-commerce over bricks and mortar establishments, Tynan felt she could build a quality brand that consumers would trust.

In 2013, Tynan met with Tige Savage, cofounder and managing partner of Revolution Ventures, a D.C.-based venture capital firm, and board member of Living Social. She casually pitched him her idea for custom framing. Savage encouraged Tynan to pursue it. Tynan noted, “So many smart people were competing in categories like ride-sharing, and I had a category I was eager to make better than no one was thinking about.” About a week later, Savage sent her a one-line email asking, “How far along are you?” Feeling energized, Tynan pulled together presentation materials and went to see him. “I presented the deck... and he said no. I was crestfallen.”⁵

She continued to pitch investors for months but got nowhere. Most of the people she pitched were men, and few understood the home goods category. No longer salaried and running into roadblocks, Tynan was at a crossroads. “A lot of people wanted to tell me why this wouldn’t work. I remember having a serious conversation in January 2014 with my sister who said, ‘As your big sister, I’m the one who has to tell you that eventually, you’re going to have to give up.’”⁶ But Tynan refused to concede.

“It was reverence for the end product that kept me going. I think getting something framed is really special,” said Tynan. “I wanted to increase accessibility and believed it required someone outside the industry to plot it from the consumers’ viewpoint.” In early 2014, she moved into a coworking space and officially launched Framebridge.

Early Days: 2014 to 2017

“I started building as though it would be funded,” reflected Tynan. Strapped for cash, Tynan paid for small items like material samples from her savings and convinced engineers to build a website, promising to pay later if she got funded. “I believed all aspects of this business needed to be done consistently at a high quality. The website needed to look beautiful, the packaging had to be branded, and the product had to be exceptional for customers to trust Framebridge to send in their special items. We had to be great right out of the gate and needed capital to make that happen,” she noted. As part of that concept, Framebridge offered a “happiness guarantee,” remaking products if customers were not 100% satisfied.

In the first quarter of 2014, she found her first investor, Dayna Grayson, a female partner at NEA ventures, who understood her concept after unsuccessfully searching for a similar service while trying to decorate her children’s rooms. Tim O’Shaughnessy, cofounder of LivingSocial, and Steve Case, former AOL CEO and venture investor, joined Grayson to close out a \$1.3 million seed round.⁷

“One of the first things I did was hire my first employee, Tessa Wolf, whom I had known from LivingSocial,” recalled Tynan. “We did everything simultaneously – found contract manufacturers, met with shipping and packing vendors, selected product materials, and oversaw building the website and app.” Tynan discovered contract manufacturing was expensive, and managing quality control was difficult. She also realized they needed a warehouse. “We carried boxes of materials daily to and from the coworking space, and the situation became untenable. Since we were looking for space, we decided to look for one that could also house manufacturing equipment.”

Vertically Integrated Manufacturing

Most custom frame shops operated as showrooms with minimal inventory on hand. However, their cost structure was laden with inefficiencies. They ordered materials from wholesalers, who charged a markup. Further, as they ordered in small, sometimes single, quantities, traditional framers had few economies of scale in material and labor costs. The result was relatively high consumer prices, low sales turnover, and modest margins for the retailer.

Tynan believed that she could change industry dynamics. By self-manufacturing, she thought Framebridge could better control quality and achieve economies of scale, offering consumers higher quality products for lower prices. The company could purchase materials by the container load, obtaining discounts and favorable shipping terms. Further, with online sales, it could forgo the cost of retail space. This lower cost structure would enable Framebridge to offer consumers more affordable prices (see **Exhibit 3** for comparative framing costs).

In April 2014, she signed a lease on a 3,800-square-foot warehouse in nearby Lanham, Maryland, that she found on Craigslist, a classified advertisements website. She purchased second-hand framing equipment from someone who owned a framing store, and he moonlighted to help her get production going in time for a July 2014 soft launch. “I thought we could have proof of concept if we sold 1,000 frames per month, even though at the time that seemed like such a daunting number,” Tynan said.

Tynan sent framed items to several magazine editors to build awareness and spur demand. Her strategy worked - two prominent publications, *Architectural Digest* and *In-Style* magazines, wrote articles about Framebridge. By late October, a popular home décor blogger wrote a post about Framebridge. Orders started rolling in, and soon the factory received 50 to 60 orders per day. In November, just before the first holiday season, the part-time factory manager quit. "It became more than what he had signed up for," Tynan said. "In a bind, I called a former colleague, who didn't have any experience in framing but was handy, and hired him to run production. On day three, he broke his leg, but he returned on crutches, and together, we made it through our first holiday." Before the end of the year, Framebridge raised an additional \$2.4 million from existing investors and Savage, who had initially passed on the investment.

In early 2015, Framebridge ran a Father's Day special that put immense pressure on an already fragile manufacturing plant. "We were selling 100 frames per day, but we could only make 70, and we slipped into a production backlog. I started thinking that it's possible this business won't scale and we won't dig ourselves out because we couldn't keep up with the orders." Customers' orders were delayed; instead of taking days to frame, it took weeks. "I started to see angry emails from people. I distinctly remember one customer telling me I ruined her grandmother's 90th birthday. Family and friends had flown in to celebrate, and her framed birthday gift wasn't there. It was late," Tynan recalled.

Differentiation Through Robotics

In early 2015, Tynan hired a new head of operations, Anthony Vicars, who helped clear the backlog in the Maryland plant. Vicars had over 20 years of operations experience, leading order fulfillment and customer care operations for several online retailers, including Amazon subsidiary Zappos, which used robotics in its fulfillment warehouse (see **Exhibit 4** for early leadership team). His vision was to create a high-tech automated manufacturing plant for Framebridge. At scale, he believed that the cost efficiencies of automation would create a defensible vertically integrated manufacturing strategy.

By 2015, several large retailers, including Crate & Barrel and Zappos, had begun employing robotics to improve the flow of goods in their order fulfillment warehouses. One of the largest robotics companies was Amazon's Kiva Systems^a, founded in 2003 by Mick Mountz (MBA 1996) after he became frustrated with inefficiencies at Webvan, an online grocery home delivery service.⁸ Mountz noted, "The company went bankrupt because we couldn't get the orders picked, packed, and shipped cost-effectively."⁹ Kiva offered an automated solution that incorporated hardware (robots) and software to optimize distribution centers. Several competitors entered the market, developing similar systems.

The concept of automating fulfillment was simple: by using robots to bring inventory items to workers rather than having the workers walk through rows of shelves to pick items, companies could fulfill orders faster, increasing operational efficiency. In a traditional manual-pick facility, up to 70% of workers' time was spent walking around the warehouse.¹⁰ One fulfillment center found implementing robotics increased their labor efficiency by 400%.¹¹

The robotics systems typically had four components: (1) Small (usually 2 ½ x 2 feet) 12-inch high retrieval robots; (2) tall upright racks or "pods" that the robots lifted and moved around the warehouse; (3) stationary work areas, where workers picked products from the pods delivered by the robots; and (4) a centralized software system that communicated orders, monitored inventory, tracked shipments, and orchestrated the movement of robots and pods throughout the warehouse. Inside an automated

^a Amazon acquired Kiva Systems in 2012. In late 2015, the name was changed to Amazon Robotics.

warehouse, everything was in motion. Several wheeled robots carrying pods weighing up to 1,000 pounds moved five miles per hour in straight lines and made 90-degree turns, gliding just six inches from one another. When a robot detected it had a low battery level, it autonomously drove itself to a charging station, and another robot took its place.¹²

Automation required capital. Kiva's most basic package, which included two workstations, 10 robots, 70 storage pods, and the software system, started at \$500,000.¹³ Outfitting a 100,000 square-foot facility could cost \$4 million to \$6 million.¹⁴

Expanding Tech-Enabled Operations

Demand for Framebridge continued to increase. From 2015 to 2016, revenues grew from \$2.6 million to \$8.3 million. Customer satisfaction was high. Net Promoter Score (NPS), a measure of customer loyalty, was 85, indicating many customers were loyal enthusiasts who promoted the brand. "The only time we saw declines in NPS was when our customer delivery time was slow, beyond two weeks," Tynan remarked.

Tynan continued to fundraise successfully, and by April 2016, she had raised an additional \$16.7 million, enabling Framebridge to build a new manufacturing plant.¹⁵ The site selected was a 100,000 square-foot warehouse near Lexington, Kentucky. Lexington was 600 miles from over two-thirds of the U.S. population and sat at the intersection of two major interstate highways, providing access to north-south and east-west bound interstate routes.¹⁶ Vicars led the design of the facility and began operations in late 2016. The new Kentucky plant focused on custom framing digital uploads (e.g., photos), while the Maryland plant focused on custom framing artwork and mementos, which required more craft skills.

Framebridge invested \$2.6 million to automate its Kentucky manufacturing plant, which included five separate robotic automation projects and six Kiva-like robots. The operations team believed adopting robotics in manufacturing would lead to similar labor efficiency improvements experienced in automated fulfillment warehouses, where productivity quadrupled, and total operating costs decreased by 20%.¹⁷ The company believed the efficiencies of automation would lead to gross margins of 50% within two years.

The manufacturing process was designed to mirror that of a high-tech assembly line. Workers remained stationary and performed specific tasks, while small robots moved materials to and from stations upon workers' demands. Software-driven machines cut materials to optimize yield. Large robots four to five feet tall simultaneously managed inventory control (see **Exhibit 5** for pictures). The vision was that humans would only perform tasks that could not be mechanized, such as mounting work, and the robots would do everything else. "We believed that automation would rapidly drive efficiency and scale, significantly lowering production costs. We would be the only high-tech, robotics-driven framing company in the industry," Tynan noted.

Milestones in 2018

By 2018, Framebridge had raised \$67 million in venture capital and developed a board of experienced investors and entrepreneurs (see **Exhibit 6** for funding history and board of directors). Annual revenue had grown to \$23 million, nearly doubling from 2017. Demand was highly seasonal; the company sold 40% of its annual volume in the last two months of the year.

The company framed over 265,000 items annually, consisting primarily of digital uploads and physical objects such as art and memorabilia that customers mailed in (see **Exhibit 7** for product mix). Digital uploads became increasingly popular as millennials uploaded photos from Instagram and other digital platforms. Additionally, customers sent in not only images and art to be framed, but also priceless mementos, such as movie tickets from a first date, a scarf from running with the bulls, autographed sports jerseys, and children's artwork. "One of my favorite items we framed was a piece of cardboard from a fort, and written on it were the kids' rules of the fort. They were very endearing rules like 'be kind.' Their mother had saved the piece and framed it for them when they were in their 20s. She wrote us a note saying it was hands down the best gift of Christmas," Tynan recalled. "Customers began framing everything they loved, upending traditional ideas of 'frameworthiness.'" (see **Exhibit 8** for examples).

By the end of 2018, the company had nearly 100,000 customers, 28% of whom had never custom framed before. Many customers became repeat purchasers, although often months or sometimes years later (see **Exhibit 9** for lifetime customer revenue chart). The typical Framebridge customer was a well-educated female millennial homeowner with a relatively high disposable income (see **Exhibit 10** for customer profile and testimonials). The company marketed to customers through digital media, and the customer acquisition cost (CAC) was around \$70. As Framebridge grew, it expanded its product offering to about 70 frames, although sales were concentrated – the top 10 frames represented two-thirds of unit sales. The company also began offering new services and products, such as pre-designed gallery wall framing, where customers uploaded multiple photos and received their framed collection days later with a life-sized hanging guide.

Emerging Challenges and Opportunities

Despite strong demand, the company was still cash flow negative. Operational gross margins had improved from 3% in 2016 to 30% in 2018, but significantly underperformed relative to the business plan (see **Exhibit 11** for financials). "Every board meeting was the same," Tynan noted. "We needed to achieve gross margins and believed our best path to profitability was scaling operations. We hadn't yet seen the margin improvements we expected but felt that they would come in a big way once automation was fully up and running."

Scaling Operations

The company had invested heavily to automate the Kentucky plant, yet orders sometimes took weeks to get back to customers. Often, the robots malfunctioned, which caused production delays and manufacturing line shutdowns. Additionally, a few of the automation projects, such as robotics for materials handling, experienced delays, further hampering operational efficiency.

In early 2018, the company consolidated its manufacturing operations, shuttering the smaller Maryland plant, where custom art and mementos were framed. Employees were offered transfer opportunities to Kentucky, although only a handful moved. The operations team experienced challenges integrating the new workload, as few in Kentucky had the skills needed to custom-frame unique items. However, operations leadership believed it was a temporary setback. To further increase efficiency, the engineering team began writing programs to codify all special instructions on custom-framed artwork and mementos. "Many customers had special requests, so codifying every possible instruction was a considerable task," Tynan remarked.

The company's leadership believed operating at scale would achieve significant cost reductions in labor and material, two of the highest production costs. Hours-per-unit, the standard metric used to

measure production efficiency, was around 1.7; the leadership team believed it could operate around 1.0 once the technology was running smoothly. But work-in-process inventory levels continued to increase, and backlogs developed.

Tynan began to wonder if they could scale a craft business, where every order was unique, through automation. Conversely, she realized operational gross margins had improved and pondered whether operations just needed more time to realize cost savings. She also contemplated if they needed to hire more robotics specialists or double down on automation to realize further cost savings. Adding complexity, the company anticipated it would soon be capacity constrained due to strong demand and would soon need to open a second manufacturing site.

Tynan understood their capital structure influenced decision-making. “You make promises to VCs not only about company performance but also about the nature of the company they are investing in. Many of our board members were investors. Some believed we were managing projects incorrectly; others thought there was insufficient accountability for deadlines. But all of them invested in Framebridge as a tech-enabled company.”

Experimenting in Retail

“A few customers started bringing their art to our headquarters. They didn’t want to ship it. They wanted to talk to someone and would leave their art with us to frame. That made us wonder if there was a need for retail,” Tynan recalled. In 2018, the company opened a few pop-up shops in the D.C. area. “They were an overwhelming success,” Tynan recalled.

In 2018, after closing the \$30 million Series C round, the company hired Jenny Merrill, an experienced retailer, to open two small format retail stores. With streamlined product selections and no onsite assembly, Framebridge stores operated with a smaller footprint—stores were 500 to 1,000 square feet, less than half the size of traditional framing stores. If the concept was successful, there could be an opportunity to open more stores. “I saw the potential for Framebridge to be the Warby Parker of frames,” Merrill recalled. “We set a goal to make the stores profitable within two years (see **Exhibit 12** for illustrative example). We believed that we would attract new customers at a higher rate, the cost to acquire those customers would be half of what it was in online channels, and they would have a higher lifetime value (LTV).” A few months after opening, Merrill saw proof of concept. “Someone popped their head in a store and asked if we could frame clothes. They returned 20 minutes later with two vintage bathing suits from the 1940s that they had been hanging on to for years. We would never have gotten that customer online,” Merrill said (see **Exhibit 13** for pictures of retail stores).

Emerging Online Competition

Competition in custom art framing was sparse. Tynan noted, “It’s difficult to copy our vertically integrated model for framing physical art. It’s capital intensive and challenging to scale.” Framebridge offered better quality products at half the price of owner-operators and big-box retailers and the leadership team felt they had established a moat around the custom business. “The customer experience is markedly better at Framebridge,” Merrill commented. “Framing isn’t a priority of big-box retailers. It’s expensive, and they mostly sell ready-made and not custom frames.”

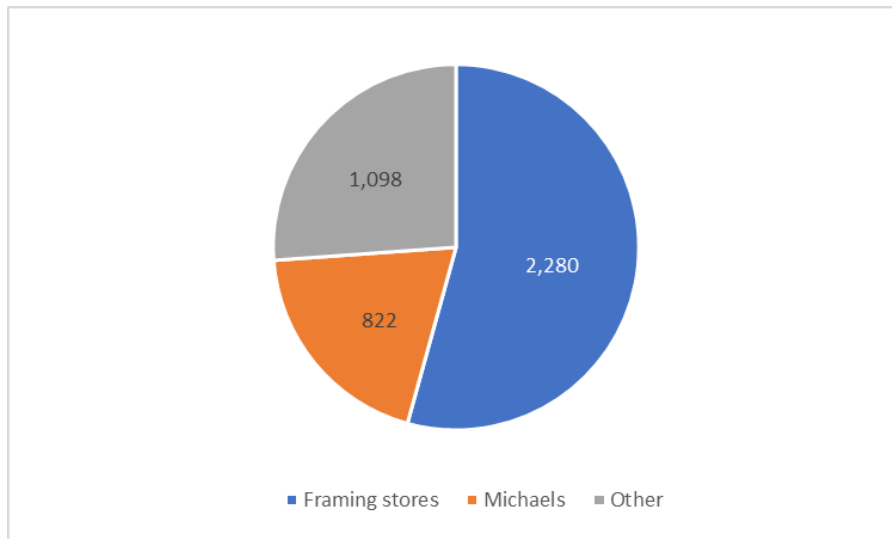
However, many online retailers, such as Minted and Artifact Uprising, began offering framing services for digital photos, increasing price pressure on Framebridge’s digital upload business. Merrill noted, “Our product is superior, but our prices for framing digital photos are slightly higher than many competitors. We have a competitive advantage for specialty products like our gallery wall offerings.”

She continued, "For customers framing art and mementos, our pricing is very competitive, but for digital framing, we have to differentiate on quality."

Looking forward

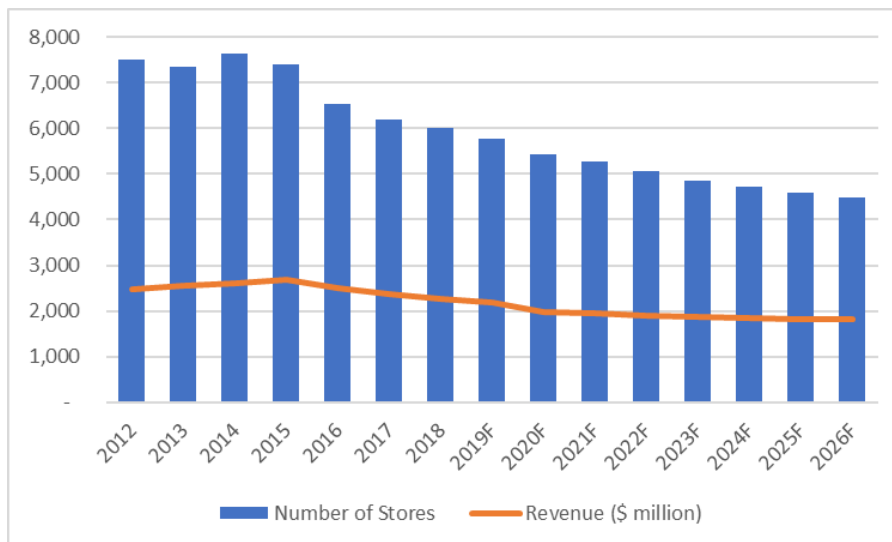
As Tynan walked around the factory, she reflected on how far Framebridge had come. She was proud of the progress that Framebridge had made. Revenues had grown, new products and channels had been launched, and the company had successfully raised capital that enabled the building of a vertically integrated, high-tech manufacturing plant. Although the growth company was not yet profitable, margins were improving.

Yet, Tynan could not stop thinking about O'Shaughnessy's email. "It was like cold water had been poured over my head," she stated. While there had been some progress on operational gross margins, the company continued to perform well below expectations. Tynan needed to decide whether to remain a tech-enabled, robotics-driven manufacturing company, as her backers had invested in, or pivot her operations strategy to more traditional manufacturing methods. Further, she had to determine her vision for retail and consider how it might impact the business. Still strapped for cash, Tynan prepared to fundraise and needed to find the best path forward.

Exhibit 1 2018 U.S. Framing Industry (\$ million)

Source: Casewriter, based on data from Brigette Thomas, "Picture Framing Stores in the U.S.," Industry Report OD4270 (IBISWorld, June 2022), Key Statistics, p. 31, IBISWorld.com.; Michael's annual report; company interviews.

Note: The custom framing industry was estimated be around \$4 billion in annual revenue. The Michaels estimate of \$822 million was based on the company's 2020 annual report and included custom and ready-made frames as framing revenue was not disclosed in 2018. The "other" category includes of Hobby Lobby, a private company, and other big-box and online retailers.

Exhibit 2 Number of Framing Stores and Framing Store Industry Revenue Over Time

Source: Casewriter, based on data from Brigette Thomas, "Picture Framing Stores in the U.S.," Industry Report OD4270 (IBISWorld, June 2022), Key Statistics, p. 31, IBISWorld.com, assessed September 2022.

Note: Framing stores represent largely owner-operators. Big-box retailers such as Michaels and Hobby Lobby and online-only retailers are excluded.

Exhibit 3 Illustrative Example of Cost to Frame a Piece of Artwork

	Framing Store	Framebridge (Online Framing)
Retail Price	250	\$ 115
Cost of Sales	88	57
Gross Margin	162	58
<i>% of retail price</i>	65%	50%
Operating Costs	143	40
Operating Income	19	\$ 18
<i>% of retail price</i>	8%	16%

Source: Casewriter, based on company interviews; "How Framers Really Price Materials," *KB Consulting*, September 2017, <https://www.kbconsultingforbusiness.com/how-framers-really-price-materials/>, accessed September 2022.

Exhibit 4 Early Leadership Team

			
Susan Tynan Founder / CEO <i>LivingSocial, Accenture</i>	Kristin Muhler COO <i>newBrandAnalytics, Sprinklr</i>	Anthony Vickers Operations <i>Zappos, Amazon</i>	Brock Wilcox Engineering <i>Optoro</i>
			
Tessa Wolf Merchandising & Creative <i>LivingSocial</i>	Rachel Lubin Customer Experience <i>LivingSocial, Hilton</i>	Matt Carrington Marketing <i>Curb, SunPower</i>	Julia Lovett Product <i>LivingSocial</i>

Source: Company documents.

Exhibit 5 Photos of Kentucky Manufacturing Plant



Source: Company documents.

Exhibit 6 2018 Funding Summary and Board of Directors

2018 Cumulative Funding Rounds

Date	Investors	Round	Amount (\$ million)
August 2014	New Enterprise Associates TimO'Shaughnessy (LivingSocial) Steve Case (Revolution Health)	Seed	\$ 1.3
December 2014	New Enterprise Associates TimO'Shaughnessy (LivingSocial) Revolution	Seed	2.5
June 2015	New Enterprise Associates Revolution	Series A	7.7
April 2016	New Enterprise Associates Revolution SWaN & Legend Venture Partners	Series A	9.0
July 2017	New Enterprise Associates Revolution SWaN & Legend Venture Partners Gordon Segal (Crate & Barrel) Beth Kaplan (Rent the Runway)	Series B	16.7
July 2018	New Enterprise Associates Revolution SWaN & Legend Venture Partners T. Rowe Price David J. Adelman (Darco Capital) Darrell Cavens (Zulily)	Series C	30.0
Total Funding			\$ 67.2

2018 Board of Directors

Name	Company Affiliation	Role
Dayna Grayson	New Enterprise Associates	Partner
Beth Kaplan	Rent the Runway	Board Member and former COO
TimO'Shaughnessy	LivingSocial, Graham Holdings	Cofounder, LivingSocial; President, Graham Holdings
Tige Savage	Revolution Ventures	Managing Partner
Fred Schaufeld	SWaN & Legend Venture Partners	Founder and Managing Director
Gordon Segal	Crate & Barrel	Cofounder and former CEO
David Strasser	SWaN & Legend Venture Partners	Managing Director

Source: Compiled from Funding Overview, Capital IQ, Inc., a division of Standard & Poor's; "Framebridge - Board Members," *Crunchbase*, accessed July 18, 2022, <https://www.crunchbase.com/organization/framebridge/people>.

Exhibit 7 2018 Product Mix

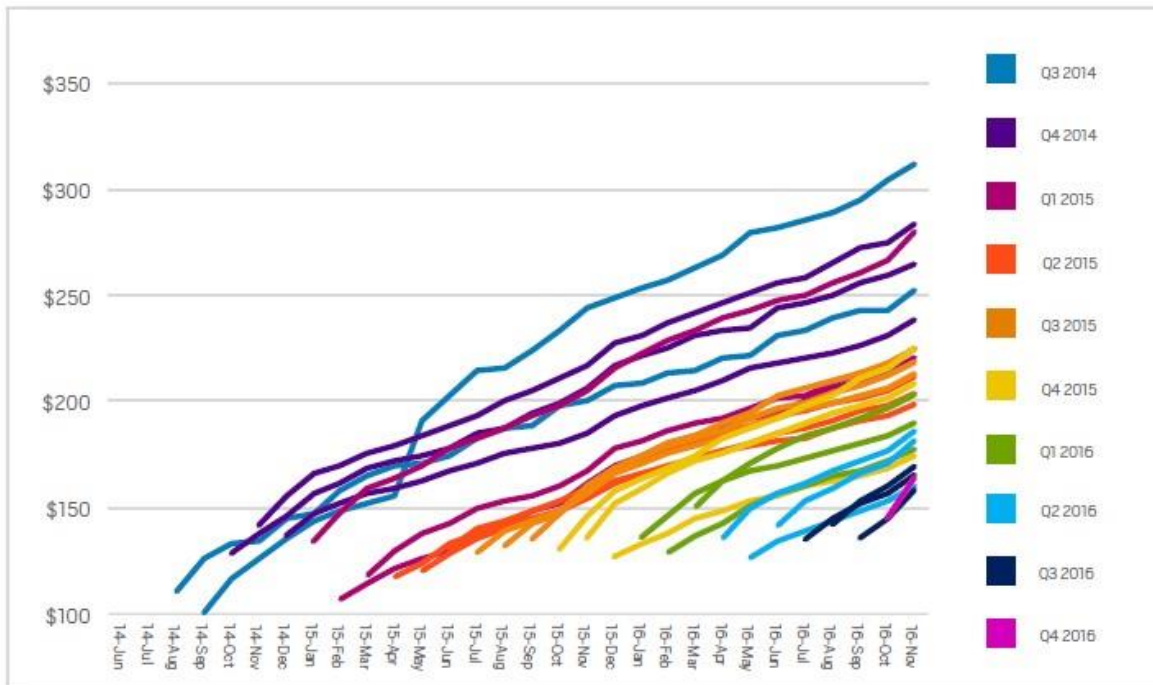
Product Category	Units Sold	Percent
Custom Digital Uploads	155,004	58.5%
Mail-In/Physical Items	89,542	33.8%
Fixed Sized Digital (i.e., Gifts)	11,171	4.2%
Fixed Sized Gallery Wall Frames	9,132	3.4%
Art Prints	228	0.1%
Total 2018	265,077	100.0%

Source: Company documents.

Exhibit 8 Examples of Mementos Framed

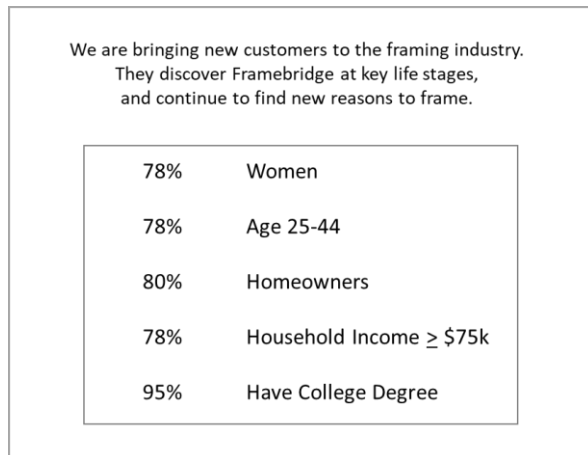
Source: Company documents.

Exhibit 9 Lifetime Customer Revenue by Monthly Cohort



Source: Company documents.

Exhibit 10 Customer Profile and Testimonials



Jillian G. Verified Buyer



Trusted Framebridge with priceless gift from my grandma

My grandmother recently died at age 96. She gave me these ceramic birds with a sweet note years ago, and I carried them through several moves, but never could figure out how to hang them. I sent them to Framebridge and they exceeded my expectations! So grateful!



kelly m. Verified Buyer



Framebridge Customer Service

Although my Father's Day present was over a month late, when I contact customer service they were so incredibly kind and easy to communicate with. Without request, I was given a full refund and allowed to keep the piece. Because of that, I am a lifelong Framebridge customer. Thank you for understanding how important putting the customer first is! Looking forward to ordering my next frame :) [Read Less](#)

Noella B. Verified Buyer



Framing is a breathe

I always go with Framebridge when I need some nice prints/posters frames because they do a beautiful job, fast and customer service is always here when you need. The pricing is also very reasonable which result in me framing all my biggest pieces with them I can't recommend enough.

Courtney K. Verified Buyer



Now I See Why So Many Others Gave 5 Stars

I was a bit skeptical on sending in prints to a company that I didn't know much about but I am totally happy with all five pieces I had framed. The previews were accurate, the turn around time was quick, the quality is great, the packaging was very thoughtful and the prices are reasonable.

Emma T. Verified Buyer



Family Keepsakes/Historic Photos

Found a series of historic AP photos on EBay of my grandparents and knew they had to be preserved and framed immediately. Frame ridge was the perfect place to send them - and get them back quickly so they can be a birthday gift to my father. Professional, high quality, fast service and a great price.

Regan C. Verified Buyer



Beautiful and easy!

I bought a cool vintage poster that sat in its shipping tube for a year before I decided to try Framebridge. I sent it in to work with a designer and settled on the cherry frame with white sides. When I got it I couldn't believe how great it looks. And a fraction of the cost for going to a framing store—especially for something this large! Will definitely frame more items with Framebridge! [Read Less](#)

Source: Company documents and website.

Exhibit 11 Framebridge 2017-2018 Income Statements (000)

	2017	2018
Revenue	\$ 15,622	\$ 23,031
<i>% growth</i>		47%
Cost of Revenue:		
Direct	10,314	14,801
Indirect	1,088	1,249
Total Cost of Revenue	11,402	16,050
Gross Margin	4,220	6,981
<i>% of revenue</i>	27%	30%
Operating Expenses:		
Sales and marketing	7,575	12,257
Research and development	843	897
General and administrative	9,569	13,034
Depreciation and amortization	276	525
Total Operating Expenses	18,263	26,713
Loss from Operations	(14,043)	(19,732)
Other Expense	(205)	(271)
Net Loss	\$ (14,248)	\$ (20,003)

Source: Company documents.

Exhibit 12 Illustrative Example of Retail Store Financials

	Year 0	Year 1	Year 2	Year 3
Revenue		\$ 1,360,320	\$ 1,564,368	\$ 1,799,023
Gross Profit		646,288	751,053	872,706
Payroll		256,348	277,177	303,590
Payment Processing		40,810	46,931	53,971
Occupancy		96,743	92,853	95,152
G&A		125,083	139,934	156,427
Total SG&A		518,984	556,895	609,140
add back depreciation		15,526	18,043	20,965
EBITDA		142,830	212,201	284,531
Percent of Revenue				
<i>Gross Margin</i>		47.5%	48.0%	48.5%
<i>Payroll</i>		18.8%	17.7%	16.9%
<i>Payment Processing</i>		3.0%	3.0%	3.0%
<i>Occupancy</i>		7.1%	5.9%	5.3%
<i>G&A</i>		9.2%	8.9%	8.7%
<i>EBITDA</i>		10.5%	13.6%	15.8%
EBITDA	-	142,830	212,201	284,531
Net Build-Out Cost	(332,500)	-	-	-
Cash Flow	\$ (332,500)	\$ 142,830	\$ 212,201	\$ 284,531
Cummulative Cash Flow	\$ (332,500)	\$ (189,670)	\$ 22,531	\$ 307,062
Payback Period (months)		23		

Source: Company documents.

Exhibit 13 Pictures of Retail Store



Source: Company documents.

Endnotes

¹ Brigette Thomas, "Picture Framing Stores in the U.S.," Industry Report OD4270 (IBISWorld, June 2022), IBISWorld.com, accessed September 2022.

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⁶ Guy Raz.

⁷ "Framebridge" (Crunchbase), https://www.crunchbase.com/organization/framebridge/company_financials, accessed July 2022.

⁸ Deborah Blagg, "Robots to the Rescue," *Harvard Business School*, March 2012, <https://www.alumni.hbs.edu/stories/Pages/story-bulletin.aspx?num=843>, accessed September 2022.

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¹¹ Robert Simons and Natalie Kindred, "Quiet Logistics, HBS No. 115-001" (Harvard Business School Publishing, 2015).

¹² Simons and Natalie Kindred.

¹³ Simons and Natalie Kindred.

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¹⁷ Eugene Kim, "Amazon's \$775 Million Deal for Robotics Company Kiva Is Starting to Look Really Smart," *Business Insider*, <https://www.businessinsider.com/kiva-robots-save-money-for-amazon-2016-6>, accessed September 2022.