

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2020

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 001-33834

RUBICON TECHNOLOGY, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization)	36-4419301 (I.R.S. Employer Identification No.)
900 East Green Street Bensenville, Illinois (Address of Principal Executive Offices)	60106 (Zip Code)

Registrant's Telephone Number, Including Area Code: (847) 295-7000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value \$.001 per share Preferred Shares Purchase Rights	The NASDAQ Capital Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of June 30, 2020, there were 2,071,865 shares of common stock outstanding held by non-affiliates of the registrant, with an aggregate market value of the common stock (based upon the closing price of these shares on the NASDAQ Capital Market) of approximately \$16,844,262.

The number of shares of the registrant's common stock outstanding as of the close of business on February 28, 2020 was 2,422,255.

Documents incorporated by reference:

Portions of the Registrant's Proxy Statement for its 2021 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K provided, that if such Proxy Statement is not filed with the Commission within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed no later than the end of such 120-day period.

Item of Form 10-K	Page
Part I	
1. Business	2
1A. Risk Factors	5
1B. Unresolved Staff Comments	14
2. Properties	14
3. Legal Proceedings	14
4. Mine Safety Disclosures	14
Part II	
5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	15
6. Selected Financial Data	15
7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	16
7A. Quantitative and Qualitative Disclosure About Market Risk	25
8. Consolidated Financial Statements and Supplementary Data	25
9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures	26
9A. Controls and Procedures	26
9B. Other Information	26
Part III	
10. Directors, Executive Officers and Corporate Governance	27
11. Executive Compensation	27
12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	28
13. Certain Relationships and Related Transactions, and Director Independence	28
14. Principal Accountant Fees and Services	28
Part IV	
15. Exhibits and Consolidated Financial Statement Schedules	29
Signatures	30
Exhibit Index	31

PART I

All statements, other than statements of historical facts, included in this Annual Report on Form 10-K including statements regarding our estimates, expectations, beliefs, intentions, projections or strategies for the future, results of operations, financial position, net sales, projected costs, prospects and plans and objectives of management for future operations may be “forward-looking statements” within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives and financial needs. These forward-looking statements can be identified by the use of terms and phrases such as “believe,” “plan,” “intend,” “anticipate,” “target,” “estimate,” “expect,” “forecast,” “prospects,” “goals,” “potential,” “likely,” and the like, and/or future-tense or conditional constructions such as “will,” “may,” “could,” “should,” etc. (or the negative thereof). Items contemplating or making assumptions about actual or potential future sales, market size and trends or operating results also constitute forward-looking statements.

Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Before investing in our common stock, investors should be aware that the occurrence of the risks, uncertainties and events described in the section entitled “Risk Factors” and elsewhere in this Annual Report could have a material adverse effect on our business, results of operations and financial condition. These risks and uncertainties include the adoption of sapphire as a material in new applications, our successful development and the market’s acceptance of new products; our ability to sell certain assets, including those in Malaysia and underutilized assets in the U.S., and the prices we receive therefor; our ability to make effective acquisitions and successfully integrate newly acquired businesses into existing operations; our ability to effectively utilize net operating loss carryforwards; dependence on key customers; our ability to secure new business and retain customers; changes in demand or the average selling prices of sapphire products; the failure to achieve the margins we expect, whether due to our own operations or changes in the market for our products; our ability to successfully qualify our products with customers and potential customers; potential disruptions in our supply of electricity; changes in our product mix; the outcome of the testing of new products and processes or the testing of our existing products for new applications; the failure of third parties performing services for us to do so successfully; our ability to protect our intellectual property rights; the competitive environment; and the cost of compliance with environmental standards. Although we believe that the expectations reflected in the forward-looking statements are reasonable, forward-looking statements are inherently subject to known and unknown risks, including business, economic and other risks and uncertainties that may cause actual results to be materially different from those discussed in these forward-looking statements. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We assume no obligation to update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report, other than as may be required by applicable law or regulation. If one or more of these risks or uncertainties materialize, or if the underlying assumptions prove incorrect, our actual results may vary materially from those expected or projected.

You should read this Annual Report and the documents that we reference in this Annual Report and have filed with the Securities and Exchange Commission (the “SEC”) as exhibits with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

Unless otherwise indicated, the terms “Rubicon,” the “Company,” “we,” “us,” and “our” refer to Rubicon Technology, Inc. and our consolidated subsidiaries.

ITEM 1. BUSINESS OVERVIEW

Rubicon Technology, Inc. (“Rubicon” or the “Company”) consists of two operating subsidiaries, Rubicon Technology Worldwide LLC (“RTW”) and Rubicon DTP LLC (“Direct Dose” or “DDR”).

RTW is a vertically integrated, advanced materials provider specializing in monocrystalline sapphire for applications in optical and industrial systems. We

design, assemble and maintain our own proprietary crystal growth furnaces to grow high-purity, low-stress, ultra-low-defect-density sapphire crystals. We use our proprietary crystal growth technology to produce high-quality sapphire products to meet our customers' exacting specifications. Sapphire is a desirable material for high-performance applications due to its hardness and strength, transparency in the visible and infrared spectrum, thermal conductivity, thermal shock resistance, abrasion resistance, high melting point and chemical inertness. As a result, it is ideally suited for extreme environments in a range of industries where material durability is just as important as optical clarity. We believe that we continue to have a reputation as one of the highest quality sapphire producers in the market. We provide optical and industrial sapphire products in a variety of shapes and sizes, including round and rectangular windows, blanks, domes, tubes and rods.

Historically, we have also provided sapphire products to the LED and mobile device markets, which are the largest markets for sapphire. However, given competitive pressures in those markets, in the fourth quarter of 2016 we announced our decision to focus on the optical and industrial sapphire markets and exit the LED market. Following this decision, we closed our Malaysia facility and scaled down and consolidated our remaining operations in the U.S. In the succeeding years we have completed individual sales and held auctions for assets located in Malaysia and at each of our U.S. properties, resulting in the sale of certain of our excess equipment and consumable assets. In December 2019 we entered into a purchase and sale agreement to sell our manufacturing facility located in Malaysia and it was completed in June 2020. In December 2020, Rubicon sold all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD. We are continuing to pursue the sale of our vacant parcel of land located in Batavia, Illinois. The timing on the sale of this real estate is difficult to predict.

We manage direct sales, grow and fabricate sapphire parts and ship from our owned facility located in Bensenville, Illinois.

Our sapphire business operates in a very competitive market. Our ability to expand our optical and industrial business and the acceptance of new product offerings are difficult to predict. Our total sales backlog was approximately \$747,000 and \$1,625,000 as of December 31, 2020 and 2019, respectively.

In May 2019, the Company established Direct Dose and acquired certain assets, hired employees and sublet a facility from a pharmacy that was in the process of liquidation. Direct Dose was launched as a start-up pharmacy primarily to deliver medications and vitamins to patients being discharged from skilled nursing facilities. As a result of the COVID-19 pandemic, patient census at skilled nursing facilities plummeted and DDRX started to work with home health care agencies for customer acquisitions.

Since RTW and Direct Dose serve smaller markets than our historical undertakings, we are actively evaluating the acquisition of profitable companies in order to utilize our substantial net operating loss ("NOL") tax carryforwards.

Rubicon Technology, Inc. is a Delaware corporation and was incorporated on February 7, 2001. Our common stock is listed on the NASDAQ Capital Market under the ticker symbol "RBCN."

SAPPHIRE INDUSTRY OVERVIEW

Sapphire is utilized in optical and industrial applications. It is used for windows and optics for aerospace, sensor, medical, semiconductor, instrumentation, electronics and laser applications due to its wide-band transmission, superior strength, chemical and scratch resistance and high strength-to-weight ratio. Sapphire's physical and optical properties also make it very well suited for defense applications such as electro-optical and sensor suite windows for military fighter jets, helicopters, unmanned air vehicles and ships, forward-looking infrared windows for commercial and business aircrafts, as well as missile domes, submarine windows and components and transparent armor for military vehicles.

PRODUCTS

We believe the developing optical and industrial markets require large-diameter sapphire products, high-quality sapphire and ultra-thin double-side polished windows and wafers which may be beyond the capability of many sapphire suppliers. In addition, military and defense applications often require a U.S.-based source for their parts. We believe we continue to have a reputation for producing the highest quality optical-grade sapphire. We also have the ability to maintain the same high quality in crystals of very large sizes, to support a strong and developing U.S. customer base, and to provide very high performance ultra-thin double-side polished sapphire products, which we believe positions us well in the optical, laser, and epitaxial growth markets.

We provide optical and industrial sapphire products in various shapes and sizes, including round and rectangular windows and blanks, domes, tubes and rods. These optical sapphire products are qualified and used in equipment for a wide variety of end markets and high performance applications, including defense and aerospace, specialty lighting, instrumentation, sensors and detectors, semiconductor process equipment, electronic substrates, medical and laser applications.

We believe we offer the industry's largest sapphire windows and highest quality, ultra-thin, double-side polished windows and substrates. Our product lines include very thin, double-side polished windows as thin as 300 microns for 6" optical diameter substrates, and also very large-area blanks and polished windows. We offer round C-plane sapphire windows up to 11" in diameter and A-plane windows up to 18" in diameter with UV grade windows up to 13.5" in diameter. We also have produced sapphire window blanks at 36" x 18" x 0.8" dimensions.

RESEARCH AND DEVELOPMENT

In 2020 and 2019, Rubicon did not incur any research and development ("R&D") expenses and it currently does not have any plans for expenditures in 2021 related to R&D.

MANUFACTURING

The process of growing crystal begins by heating the raw material, aluminum oxide, until it reaches an ideal temperature above its melting point. This ideal temperature is essential for our process because it allows us to produce high-purity crystals with very low defect rates. Following the heating, a seed rod is inserted in the melted material as the material is being cooled to crystallize into a boule. Following the growth process, each boule is rigorously inspected by using polarized lighting and magnification to find imperfections, such as bubbles, dislocations and granular deposits within the crystal. We then drill the resulting boules into cylindrical cores using our custom high-precision crystal orientation equipment and proprietary processes. For some of our parts, the cores are then finished through an outsourcing model using trusted partners.

We are dedicated to quality assurance throughout our entire operation. We employ detailed material traceability from raw material to finished product. Our quality system is certified as ISO9001:2000.

All of our long-lived assets are located in the United States.

SALES AND MARKETING

We market and sell our products through our direct sales force to customers. Our direct sales team includes experienced and technically sophisticated sales professionals and engineers who are knowledgeable in the development, manufacturing and use of sapphire windows and other optical materials. Our sales staff works with customers during all stages of the manufacturing process, from developing the precise composition of the parts through manufacturing and processing the parts to the customers' specifications.

A key component of our marketing strategy is developing and maintaining strong relationships with our customers. We achieve this by working closely with our customers to optimize our products for their production processes. In addition, we are able to develop long-term relationships with key customers by offering product specification assistance, providing direct access to enable them to evaluate and audit our operations, delivering high-quality products and providing

CUSTOMERS

Our principal customers have been defense subcontractors, industrial manufacturers, fabricators and resellers. A substantial portion of our sales have been to a small number of customers. In 2020, our top four customers (each 10% or greater of our revenues) accounted for, in the aggregate, approximately 55% of our revenue and in 2019, the top three customers accounted for approximately 58% of our revenue. Although we are attempting to diversify and expand our customer base, we expect our sales to be concentrated among a small number of customers. However, we also expect that our significant customers may change from time to time. No other customer accounted for 10% or more of our revenues during 2020 or 2019 other than those referred to above.

INTELLECTUAL PROPERTY

We rely primarily upon a combination of know-how, patents, trade secret laws and non-disclosure agreements with employees, customers and potential customers to protect our intellectual property. However, we believe that factors such as the technological and innovative abilities of our personnel, the success of our ongoing product development efforts and our efforts to maintain trade secret protection are more important than patents in maintaining our competitive position.

COMPETITION

The markets for high-quality sapphire products are very competitive and have been characterized by rapid technological change. The products we produce must meet certain demanding requirements to succeed in the marketplace. Although we are a well-established sapphire producer, we face significant competition from other established providers of similar products as well as from new and potential entrants into our markets.

We have several competitors that compete directly with us. We believe that the key competitive factors in our markets are:

- consistently producing high-quality products in the desired size, orientation and finish;
- producing large-format high-quality crystal for certain applications;
- providing an United States based source of sapphire for military applications; and
- the financial stability of a company.

We believe the developing optical and industrial markets require cost effective high-quality sapphire, large-diameter sapphire products and ultra-thin double-side polished windows and wafers, which we have the capabilities to provide while certain other sapphire producers may not. In addition, defense applications often require a U.S.-based source for sapphire. We believe we continue to have a reputation for producing the highest quality sapphire in the market. We believe this positions us well with competitive advantages in the markets for optical and industrial sapphire.

ENVIRONMENTAL REGULATION

In our manufacturing process, we use water, oils, slurries, acids, adhesives and other industrial chemicals. We are subject to a variety of federal, state and local laws regulating the discharge of these materials into the environment or otherwise relating to the protection of the environment. These include statutory and regulatory provisions under which we are responsible for the management of hazardous materials we use and the disposition of hazardous wastes resulting from our manufacturing processes. Failure to comply with such provisions, whether intentional or inadvertent, could result in fines and other liabilities to the government or third parties, injunctions requiring us to suspend or curtail operations or other remedies, which could have a material adverse effect on our business. The cost of complying with environmental regulation is not material.

EMPLOYEES

As of December 31, 2020, we had 18 full-time employees. None of our employees are represented by a labor union. We consider our employee relations to be good.

OTHER INFORMATION

You may access, free of charge, our reports filed with the SEC (for example, our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K and any amendments to those forms) over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our SEC filings are also available through our Internet website (www.rubicontechnology.com). Reports filed with or furnished to the SEC will be available as soon as reasonably practicable after they are filed with or furnished to the SEC. Alternatively, if you would like a paper copy of any such SEC report (without exhibits) or document, write to Investor Relations, Rubicon Technology, Inc., 900 East Green Street, Bensenville, Illinois 60106, and a copy of such requested document will be provided to you, free of charge. The information found on our website is not part of this or any other report filed with or furnished to the SEC.

ITEM 1A. RISK FACTORS

You should carefully read the risk factors set forth below, together with the financial statements, related notes and other information contained in this Annual Report on Form 10-K. Our business is subject to a number of important risks and uncertainties, some of which are described below. The risks described below, however, are not the only risks that we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also impair our business operations. Any of these risks may have a material adverse effect on our business, financial condition, results of operations and cash flows. Please refer to the discussion of "forward-looking statements" on page one of this Annual Report on Form 10-K in connection with your consideration of the risk factors and other important factors that may affect future results described below.

We have incurred significant losses in prior periods and may incur losses in the future.

We have incurred significant losses in prior periods and may incur significant losses in the future. These losses may have an adverse effect on our ability to attract new customers or retain existing customers. We have incurred net losses of \$1.1 million, \$1.1 million, \$17.8 million and \$62.9 million in 2020, 2019, 2017 and 2016, respectively. Although we recorded net income of \$963,000 in 2018, there can be no assurance that we will achieve profitability in future periods.

We are exploring, evaluating and have begun implementing certain strategic alternatives with a goal of providing greater value to our stockholders. There can be no assurance that we will be successful in identifying additional strategic alternatives or implementing any strategic alternative, or that any strategic alternative will yield additional value for stockholders.

Our management and Board of Directors are continuing to explore strategic alternatives with a goal of providing greater value to our stockholders. These alternatives could result in, among other things, modifying or eliminating certain of our operations, selling material assets, seeking additional financing, selling the business, making investments, effecting a merger, consolidation or other business combination, partnering or other collaboration agreements, or potential acquisitions or recapitalizations, in one or more transactions.

There can be no assurance that our continued exploration of strategic alternatives will result in the identification of additional alternatives or that any transaction will be consummated. The process of exploring strategic alternatives may be costly and may be time consuming, distracting to management and disruptive to our business operations. If we are unable to effectively manage the process, our business, financial condition and results of operations could be adversely affected. We also cannot provide assurance that any potential transaction, investment or other alternative identified, evaluated and consummated, will provide greater value to our stockholders than that reflected in the current stock price. Any potential transaction or investment would be dependent upon a number of factors that may be beyond our control, including, among other factors, market conditions, industry trends and the availability of financing to us on reasonable terms.

We may acquire other businesses, products or technologies; if we do, we may be unable to integrate them with our business effectively or at all, which may adversely affect our business, financial condition and operating results.

If we find appropriate opportunities and have adequate funding, we may acquire other businesses, product lines or technologies. However, if we acquire a business, product line or technology, the process of integration may produce unforeseen operating difficulties and expenditures and may absorb significant attention of our management that would otherwise be available for the ongoing development of our business. Further, the acquisition of a business may result in the assumption of unknown liabilities or create risks with respect to our existing relationships with suppliers and customers. If we make acquisitions, we may issue shares of stock that dilute other stockholders, expend cash, incur debt, assume contingent liabilities or create additional expenses related to amortizing intangible assets, any of which may adversely affect our business, financial condition or operating results.

If we are unable to raise additional capital when needed, we may not be able to execute the acquisition of other businesses.

We may require additional capital to fund operations, capital expenditures and or the acquisition of other businesses. We may finance future cash needs through public or private equity offerings, debt financings, corporate collaborations or licensing arrangements. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our acquisition opportunities. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience dilution, and debt financing, if available, may involve restrictive covenants. To the extent that we raise additional funds through corporate collaborations or licensing arrangements, it may be necessary to relinquish some rights to our technologies or our new products, or grant licenses on terms that may not be favorable to us. We may seek to access the public or private capital markets whenever conditions are favorable, even if we do not have an immediate need for additional capital at that time.

We believe our existing cash, cash equivalents and short-term investments and interest thereon, will be sufficient to fund our projected operating requirements for at least the next twelve months. However, if our success in generating sufficient operating cash flow or our use of cash in the next twelve months were to significantly adversely change, we may not have enough funds available to continue operating at our current level in future periods. A limitation of funds available may raise concerns about our ability to continue to operate. Such concerns may limit our ability to obtain financing and some customers may not be willing to do business with us.

Rubicon Technology Worldwide

We rely on third parties for certain finishing steps for our products, including the slicing and polishing of our sapphire crystal.

In order to reduce product costs and improve cash flow, we use third parties for certain finishing functions for our products, including the slicing and polishing of our sapphire crystal inventory. These types of services are only available from a limited number of third parties. Our ability to successfully outsource these finishing functions will substantially depend on our ability to develop, maintain and expand our strategic relationship with these third parties. Any impairment in our relationships with the third parties performing these functions, in the absence of a timely and satisfactory alternative arrangement, could have a material adverse effect on our business, results of operations, cash flow and financial condition. In addition, we do not control any of these third parties or the operation of their facilities, and we may not be able to adequately manage and oversee the third parties performing our finishing functions. Accordingly, any difficulties encountered by these third parties that result in product defects, delays or defaults on their contractual commitments to us could adversely affect our business, financial condition and results of operations. In addition, their facilities may be vulnerable to damage or interruption from natural disasters, inclement weather conditions, power loss, acts of terrorism and similar events. A decision to close a facility without adequate notice as a result of these or other unanticipated problems at the facility could result in lengthy interruptions in their services to us; and any loss or interruption of these services could significantly increase our expenses, cause us to default on our obligations to our customers and/or otherwise adversely affect our business. Furthermore, the outsourcing of our finishing steps, such as slicing and polishing of wafers, may not continue to be available at reasonable prices or on commercially reasonable terms, or at all.

Our gross margins could fluctuate as a result of changes in our product mix and other factors, which may adversely impact our operating results.

We anticipate that our gross margins will fluctuate from period to period as a result of the mix of products that we sell in any given period. We are working to increase sales of higher margin products, introduce new differentiated products and lower our costs. There can be no assurance that we will be successful in improving our gross margin mix. If we are not successful, our overall gross margin levels and operating results in future periods would continue to be adversely impacted. Increased competition and the adoption of alternatives to our products, more complex engineering requirements, lower demand and other factors may lead to a further downward shift in our product margins, leading to price erosion and lower revenues for us in the future.

The markets in which we operate are very competitive, and many of our competitors and potential competitors are larger, more established and better capitalized than we are.

The markets for selling high-quality sapphire products are very competitive and have been characterized by rapid technological change. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses, and failure to increase, or the loss of, market share or expected market share, any of which would likely seriously harm our business, operating results and financial condition.

Our business is subject to extensive regulation.

Our pharmacists and pharmacy are required to be licensed by State Boards of Pharmacy. The pharmacy is also registered with the United States Drug Enforcement Administration. By virtue of these license and registration requirements, the entities owned by us are obligated to observe certain rules and regulations, and a violation of such rules and regulations could result in fines and/or in a suspension or revocation of a license or registration.

Risk related to third party payors.

Our revenues and profitability are affected by the continuing efforts of all third-party payors, including but not limited to HMOs, managed care organizations, PBMs and government programs (which are subject to statutory and regulatory requirements, administrative rulings, interpretations of policy, implementation of reimbursement procedures, retroactive payment adjustments, governmental funding restrictions and changes to existing legislation such as Medicare, Medicaid and

other federal and state funded programs) to contain or reduce the costs of health care by lowering reimbursement rates, narrowing the scope of covered services, increasing case management review of services and negotiating reduced contract pricing. Any changes in reimbursement levels from these third-party payor sources and any changes in applicable government regulations could have a material adverse effect on our revenues and profitability. While manufacturers have increased the price of drugs, payors have generally decreased reimbursement rates as a percentage of drug cost. We expect pricing pressures from third-party payors to continue given the high and increasing costs of pharmaceutical drugs. Changes in the mix of pharmacy prescriptions covered by third party payors among Medicare, Medicaid and other payor sources may also impact our revenues and profitability. There can be no assurance that we will continue to maintain the current payor, revenue or profitability mix.

We are substantially dependent on a limited number of suppliers of pharmaceutical products to sell products to us on satisfactory terms. A disruption in our relationship with this supplier could have a material adverse effect on our business.

We obtain a majority of our total merchandise, including over 90% of our pharmaceuticals, from two primary suppliers, Smith Drug and McKesson Corporation with whom we rely on for brand name pharmaceuticals. Any significant disruptions in our relationship with either supplier, or deterioration in their financial condition, could have a material adverse effect on us.

Failure to maintain a sufficient credit profile to qualify for favorable pricing and payment terms with suppliers could increase the costs of our products.

Our current agreements with our suppliers provides us with favorable pricing and credit terms. If we fail to meet certain minimum purchase commitments or are unable to make timely payments we may be required to purchase our pharmaceutical products on less favorable pricing and credit terms.

7

We could be adversely affected by a decrease in the introduction of new brand name and generic prescription drugs as well as increases in the cost to procure prescription drugs.

New brand name drugs can result in increased drug utilization and associated sales, while the introduction of lower priced generic alternatives typically results in relatively lower sales, but relatively higher gross profit margins. Accordingly, a decrease in the number or magnitude of significant new brand name drugs or generics successfully introduced, or delays in their introduction, could materially and adversely affect our results of operations.

In addition, if we experience an increase in the amounts we pay to procure pharmaceutical drugs, including generic drugs, it could have a material adverse effect on our results of operations. Our gross profit margins would be adversely affected to the extent we are not able to offset such cost increases. Any failure to fully offset any such increased prices and costs or to modify our activities to mitigate the impact could have a material adverse effect on our results of operations. Additionally, any future changes in drug prices could be significantly different than our projections.

Legislative or regulatory policies in the U.S. designed to manage healthcare costs or alter healthcare financing practices or changes to government policies in general may adversely impact our business and results of operations.

Currently, there are numerous congressional, legislative and/or regulatory proposals which seek to amend and or replace the Affordable Care Act including proposals to manage the cost of healthcare, including prescription drug cost. Such proposals may include changes in reimbursement rates, restrictions on rebates and discounts, restrictions on access or therapeutic substitution, limits on more efficient delivery channels, taxes on goods and services, price controls on prescription drugs, and other significant healthcare reform proposals, including their repeal or replacement. Further, more exacting regulatory policies and requirements specific to the pharmacy sector may cause a rise in costs, labor, and time to meet all such requirements. We are unable to predict whether any such policies or proposals will be enacted, or the specific terms thereof. Certain of these policies or proposals, if enacted, could have a material adverse impact on our business.

Our business operations involve the substantial receipt and use of confidential health information concerning individuals. A failure to adequately protect any of this information could result in severe harm to our reputation and subject us to significant liabilities, each of which could have a material adverse effect on our business.

Most of our activities involve the receipt or use of personal health information (“PHI”) concerning individuals. There is substantial regulation at the federal and state levels addressing the use, disclosure, and security of PHI. At the federal level, HIPAA and the regulations issued thereunder impose extensive requirements governing the transmission, use, and disclosure of health information by all participants in health care delivery, including physicians, hospitals, insurers, and other payors. Many of these obligations were expanded under Health Information Technology for Economic and Clinical Health, passed as part of the American Recovery and Reinvestment Act of 2009. Failure to comply with standards issued pursuant to federal or state statutes or regulations may result in criminal penalties and civil sanctions. In addition to regulating privacy of PHI, HIPAA includes several anti-fraud and abuse laws, extends criminal penalties to private health care benefit programs and, in addition to Medicare and Medicaid, to other federal health care programs, and expands the Office of Inspector General’s authority to exclude persons and entities from participating in the Medicare and Medicaid programs. Further, future regulations and legislation that severely restrict or prohibit our use of patient identifiable or other information could limit our ability to use information critical to the operation of our business. If we violate a patient’s privacy or are found to have violated any federal or state statute or regulation with regard to confidentiality or dissemination or use of PHI, we could be liable for significant damages, fines, or penalties and suffer severe reputational harm, each of which could have a material adverse effect on our reputation, our business, our results of operations, and our future prospects.

Some of our competitors and potential competitors are substantially larger and have greater financial, technical, marketing and other resources than we do. Given their capital resources, the large companies with which we compete, or may compete in the future, are in a better position to substantially increase their manufacturing capacity and research and development efforts or to withstand any significant reduction in orders by customers in our markets. Such larger companies typically have broader product lines and market focus and thus are not as susceptible to downturns in a particular market. Some of our competitors also receive government subsidies, which could create a competitive advantage. We would be at a competitive disadvantage if our competitors bring their products to market earlier, if their products are more technologically capable than ours, or if any of our competitors’ products or technologies becomes preferred in the industry. Moreover, we cannot assure you that existing or potential customers will not develop their own products, or acquire companies with products that are competitive with our products. Any of these competitive threats could have a material adverse effect on our business, operating results or financial condition.

8

The average selling prices of sapphire products have historically been volatile and in recent years sapphire product prices have been increasingly depressed.

Historically, our industry has experienced volatility in product demand and pricing. However, in the last five years, the sales prices for our sapphire products have trended downward due to an over-supply of products in the market. In some countries, government programs support sapphire producers who would otherwise be unprofitable; in such circumstances, sapphire may be sold at prices below cost for an extended period of time, depressing market prices, to the detriment of our gross margins. This has had a significant adverse impact on our profitability and our results of operations. Moreover, changes in average selling prices of our products as a result of competitive pricing pressures increased sales discounts and new product introductions by our competitors could have a significant impact on our profitability. Although we attempt to optimize our product mix, introduce new products, reduce manufacturing costs and pass along certain increases in costs to our customers in order to lessen the effect of decreases in selling prices, we may not be able to successfully do so in a timely manner or at all, and our results of operations and business may be harmed.

Our future operating results may fluctuate significantly, which makes our future results difficult to predict and could cause our operating results for particular periods to fall below expectations.

Our revenues and operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations are due to a number of factors, many of which are beyond our control. In connection with the Board of Directors' continuing review of alternatives with a goal of providing greater value to our stockholders, on September 12, 2016, we announced the Board's decision to limit our business focus to the optical and industrial sapphire markets and to exit the LED and mobile device markets. The optical and industrial sapphire markets are smaller markets than our historical undertakings and there is no assurance that we will be able to successfully expand our optical and industrial sapphire business, or that such shift in focus will ultimately improve our profitability or operating results.

We depend on a few customers for a major portion of our sales and our results of operations would be adversely impacted if they reduce their order volumes.

Historically, we have earned, and believe that in the future we will continue to earn, a substantial portion of our revenue from a small number of customers. In 2020 our top four customers accounted for, in the aggregate, approximately 55% of our revenue and in 2019 our top three customers accounted for approximately 58% of our revenue. If we were to lose one of our major customers or have a major customer significantly reduce its volume of business with us, our revenues and profitability would be materially reduced unless we are able to replace such demand with other orders promptly. We expect to continue to be dependent on our major customers, the number and identity of which may change from period to period.

We generally sell our products on the basis of purchase orders. Thus, most of our customers could cease purchasing our products with little or no notice and without penalties. In addition, delays in product orders could cause our quarterly revenue to vary significantly. A number of factors could cause our customers to cancel or defer orders, including interruptions to their operations due to a downturn in their industries, natural disasters, delays in manufacturing their own product offerings into which our products are incorporated, securing other sources for the products that we manufacture or developing such products internally.

If we are unable to attract or retain qualified personnel, our business could be harmed.

Our success depends on our continued ability to identify, attract, hire, train, retain and motivate highly skilled technical, managerial, manufacturing, administrative and sales and marketing personnel. Competition for these individuals is intense, and we may not be able to successfully recruit, assimilate or retain sufficiently qualified personnel. In particular, we may encounter difficulties in recruiting and retaining a sufficient number of qualified personnel. The inability to attract and retain necessary technical, managerial, manufacturing, administrative and sales and marketing personnel could harm our ability to obtain new customers and develop new products and could adversely affect our business and operating results. In addition, the loss of the services, or distraction, of our senior management for any reason could adversely affect our business, operating results and financial condition.

We are dependent on the continued services and performances of certain senior management employees such as sales management and the head of operations.

Our future success is dependent on the continued services and contributions of our senior management who must work together effectively in order to design and produce our products, expand our business, increase our revenue and improve our operating results. The loss of services of our senior management for any reason could adversely affect our business, operating results and financial condition.

Our gross margins and profitability may be adversely affected by energy costs.

Most of our power consumption takes place in our manufacturing facility in the United States. Electricity prices could increase due to overall changes to the price of energy due to conditions in the Middle East, natural gas shortages in the U.S. and other economic conditions and uncertainties regarding the outcome and implications of such events. Once our current purchase agreements expire, if electricity prices increase significantly, we may not be able to pass these price increases through to our customers on a timely basis, if at all, which could adversely affect our gross margins and results of operations.

The protection of our intellectual property rights and the defense of claims of infringement against us by third parties may subject us to costly litigation.

Other companies might allege that we are infringing certain of their patents or other rights. If we are unable to resolve these matters satisfactorily, or to obtain licenses on acceptable terms, we may face litigation. Any litigation to enforce patents issued to us, to protect trade secrets or know-how possessed by us or to defend us or indemnify others against claimed infringement of the rights of others could have a material adverse effect on our financial condition and operating results. Regardless of the validity or successful outcome of any such intellectual property claims, we may need to expend significant time and expense to protect our intellectual property rights or to defend against claims of infringement by third parties, which could have a material adverse effect on us. If we lose any such litigation where we are alleged to infringe the rights of others, we may be required to:

- pay substantial damages;
- seek licenses from others; or
- change, or stop manufacturing or selling, some or all of our products.

Any of these outcomes could have an adverse effect on our business, results of operations or financial condition.

We are subject to numerous environmental laws and regulations, which could expose us to environmental liabilities, increase our manufacturing and related compliance costs or otherwise adversely affect our business and operating results.

In our manufacturing process, we use water, oils, slurries, acids, adhesives and other industrial chemicals. We are subject to a variety of foreign, federal, state and local laws and regulations governing the protection of the environment. These environmental laws and regulations include those relating to the use, storage, handling, discharge, emission, disposal and reporting of toxic, volatile or otherwise hazardous materials used in our manufacturing processes. These materials may have been or could be released into the environment at properties currently or previously operated by us, at other locations during the transport of the materials, or at properties to which we send substances for treatment or disposal. If we were to violate or become liable under environmental laws and regulations or become non-compliant with permits required at some of our facilities, we could be held financially responsible and incur substantial costs, including investigation and cleanup costs, fines and civil or criminal sanctions, third-party property damages or personal injury claims. In addition, new laws and regulations or stricter enforcement of existing laws and regulations could give rise to additional compliance costs and liabilities.

RTW's operations are concentrated in one facility, and the unavailability of this facility could harm our business.

Our manufacturing, research and development, sales and marketing, and administrative activities are concentrated in one facility located in Bensenville, Illinois. Going forward, this will be RTW's sole operating facility. Should a casualty, natural disaster, inclement weather, an outbreak of disease, power loss, an act of terrorism or similar event affect the Chicagoland area, our operations could be significantly impacted. We may not be able to replicate the manufacturing capacity and other operations of our Bensenville facility or such replication could take significant time and resources to accomplish. The disruption from such an event could adversely affect or interrupt entirely our ability to conduct our business.

We are dependent on information technology, and disruptions, failures or security breaches of our information technology infrastructure could have a material adverse effect on our operations. In addition, increased information technology security threats and more sophisticated computer crime pose a risk to our

We rely on information technology networks and systems, including the Internet and cloud services, many of which are managed by third parties, to securely process, transmit and store electronic information of financial, marketing, legal and regulatory nature to manage our business processes and activities. Although we have implemented enhanced controls around our information technology systems, these systems may be susceptible to damage, disruptions or shutdowns due to failures during the process of upgrading or replacing software, databases, power outages, hardware failures, telecommunication failures, user errors, natural disasters, terrorist attacks or other catastrophic events. If any of our significant information technology systems suffer severe damage, disruption or shutdown, and our disaster recovery and business continuity plans do not effectively resolve the issues in a timely manner, our product sales, financial condition and results of operations may be materially and adversely affected, and we could experience delays in reporting our financial results, or our operations may be disrupted, exposing us to performance failures with customers. In addition, cybersecurity threats, such as computer viruses, attacks by computer hackers or other cybersecurity threats pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data. There can be no assurance that our security controls and safeguard measures taken to improve our cybersecurity protection will be sufficient to mitigate all potential risks to our systems, networks and data. Potential consequences of a cybersecurity attack include disruption to systems, corruption of data, unauthorized release of confidential or otherwise protected information, reputational damage, and litigation with third parties. The amount of insurance coverage we maintain may be inadequate to cover claims or liabilities related to a cybersecurity attack.

Our U.S. NOL carryforwards may expire or could be substantially limited if we experience an ownership change as defined in the Internal Revenue Code (“IRC”) or if changes are made to the IRC.

We have significant U.S. NOL carryforwards. Under federal tax laws, we can carry forward and use our NOLs to reduce our future U.S. taxable income and tax liabilities until such NOL carryforwards expire in accordance with the IRC of 1986, as amended. Our NOL carryforwards provide a benefit to us, if fully utilized, of significant future tax savings. However, our ability to use these tax benefits in future years will depend upon the amount of our federal and state taxable income. If we do not have sufficient federal and state income in future years to use the benefits before they expire, we will permanently lose the benefit of the NOL carryforwards. Our ability to use the tax benefits associated with our NOL carryforwards is dependent upon our generation of future taxable profits and our ability to successfully identify and consummate suitable acquisitions or investment opportunities.

Additionally, Section 382 and Section 383 of the IRC provide an annual limitation on our ability to utilize our NOL carryforwards, as well as certain built-in losses, against the future U.S. taxable income in the event of a change in ownership, as defined under the IRC. While we have implemented a stockholder’s right plan to protect our NOL carryforwards, there is no assurance that we will not experience a change in ownership in the future as a result of changes in our stock ownership, and any such subsequent changes in ownership for purposes of the IRC could further limit our ability to use our NOL carryforwards.

Under the recently enacted Tax Cut and Jobs Act, U.S. NOLs generated on or after January 1, 2018, could be limited to 80% of taxable income. If other changes were made to the IRC, they could impact our ability to utilize our NOLs. Accordingly, any such occurrences could adversely affect our financial condition, operating results and cash flows.

The Company’s business, results of operations, financial condition and stock price have been adversely affected and could in the future be materially adversely affected by the COVID-19 pandemic.

COVID-19 has spread rapidly throughout the world, prompting governments and businesses to take unprecedented measures in response. Such measures have included restrictions on travel and business operations, temporary closures of businesses, and quarantines and shelter-in-place orders. The COVID-19 pandemic has significantly curtailed global economic activity and caused significant volatility and disruption in global financial markets. The Company maintains a limited staff of full time employees in skilled technical, non-technical and key management positions at both of its RTW and DDRX operations. If employees become infected by the COVID-19 virus we may not be able to maintain normal business operations for an extended period of time.

The COVID-19 pandemic and the measures taken by many countries in response have adversely affected and could in the future materially adversely impact the Company’s business, results of operations, financial condition and stock price. Following the initial outbreak of the virus, the Company experienced disruptions to its manufacturing, supply chain and logistical services provided by outsourcing partners, resulting in temporary supply shortages that affected sales worldwide. Both the RTW and DDRX business are heavily reliant on domestic and foreign supply chains to operate its businesses. The COVID-19 pandemic may limit and restrict our access to necessary products that are required to operate. New customer acquisitions for DDRX requires establishing and maintaining ongoing relationships with health care facilities. The Covid-19 pandemic protocols at health care facilities restricts access to these facilities which may impact DDRX ability to gain access and attract new patients.

The Company is continuing to monitor the situation and take appropriate actions in accordance with the recommendations and requirements of relevant authorities. The full extent of the impact of the COVID-19 pandemic on the Company’s operational and financial performance is currently uncertain and will depend on many factors outside the Company’s control, including, without limitation, the timing, extent, trajectory and duration of the pandemic, the development and availability of effective treatments and vaccines, the imposition of and compliance with protective public safety measures, and the impact of the pandemic on the global economy and demand for consumer products. Additional future impacts on the Company may include, but are not limited to, material adverse effects on: demand for the Company’s products and services; the Company’s supply chain and sales and distribution channels; the Company’s ability to execute its strategic plans; and the Company’s profitability and cost structure.

To the extent the COVID-19 pandemic adversely affects the Company’s business, results of operations, financial condition and stock price, it may also have the effect of heightening many of the other risks described in this Part I, Item 1A of this Form 10-K.

RISKS RELATED TO OWNERSHIP OF OUR COMMON STOCK

The trading price of our common stock has been and will likely continue to be volatile due to various factors, some of which are beyond our control, and each of which could adversely affect our stockholders’ value.

Factors related to our Company and our business, as well as broad market and industry factors, may adversely affect the market price of our common stock, regardless of our actual operating performance. Such factors that could cause fluctuations in our stock price include, among other things:

- changes in market valuations of other companies in our industry;
- changes in financial guidance or estimates by us, by investors or by any financial analysts who might cover our stock or our industry;
- our ability to meet the performance expectations of financial analysts or investors;
- our ability to develop and market new and enhanced products on a timely basis;
- credit conditions;
- announcements by us or our competitors of significant products, contracts, acquisitions or strategic partnerships;
- general market and economic conditions; and
- the size of the public float of our stock.

Our certificate of incorporation, bylaws and Delaware law may discourage takeovers and business combinations that our stockholders might consider in their best interests.

A number of provisions in our certificate of incorporation and bylaws, as well as anti-takeover provisions of Delaware law, may have the effect of delaying, deterring, preventing or rendering more difficult a change in control of Rubicon that our stockholders might consider in their best interests. These provisions include:

- a classified Board of Directors;
- a tax benefits preservation plan designed to preserve our ability to utilize our net operating losses as a result of certain stock ownership changes, which may have the effect of discouraging transactions involving an actual or potential change in our ownership;
- granting to the Board of Directors sole power to set the number of directors and to fill any vacancy on the Board of Directors, whether such vacancy occurs as a result of an increase in the number of directors or otherwise;
- limitations on the ability of stockholders to remove directors;
- the ability of our Board of Directors to designate and issue one or more series of preferred stock without stockholder approval, the terms of which may be determined at the sole discretion of the Board of Directors;
- prohibition on stockholders from calling special meetings of stockholders;
- prohibition on stockholders from acting by written consent; and
- establishment of advance notice requirements for stockholder proposals and nominations for election to the Board of Directors at stockholder meetings.

These provisions may prevent our stockholders from receiving the benefit from any premium to the market price of our common stock offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of our common stock if they are viewed as discouraging takeover attempts in the future.

The foregoing provisions of our certificate of incorporation and bylaws may also make it difficult for stockholders to replace or remove our management. These provisions may facilitate management entrenchment that may delay, deter, render more difficult or prevent a change in our control, which may not be in the best interests of our stockholders.

We are subject to litigation risks, including securities class action litigation, which may be costly to defend.

All industries, including ours, are subject to legal claims, including securities litigation. When the market price of a stock declines significantly, due to factors such as trends in the stock market in general, broad market and industry fluctuations or operating performance, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. This sort of litigation can be particularly costly and may divert the attention of our management and our resources in general. We have been subject to securities class action litigation in the past, as disclosed in our previous filings with the SEC. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal claim or proceeding (including by settlement) could have a material effect on our business, financial condition, results of operations or cash flows. Further, uncertainties resulting from the initiation and continuation of securities or other litigation could harm our ability to obtain credit and financing for our operations and to compete in the marketplace.

Our Board of Directors does not intend to declare or pay any dividends to our stockholders in the foreseeable future.

The declaration, payment and amount of any future dividends will be made at the discretion of our Board of Directors and will depend upon, among other things, the results of our operations, cash flows and financial condition, operating and capital requirements, and other factors the Board of Directors considers relevant. There is no plan to pay dividends in the foreseeable future, and if dividends are paid, there can be no assurance with respect to the amount of any such dividend.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Disclosure under this item is not required, as the registrant is a smaller reporting company.

ITEM 2. PROPERTIES

All of our sapphire operations and certain of our executive functions are located in our Bensenville, Illinois, 30,000 square-foot facility that we purchased in September 2018.

We own a parcel of land in Batavia, Illinois, which was acquired in 2012 for future expansion. This property is currently available for sale and being marketed.

The Company completed the sale of its Malaysian facility in June 2020. In December 2020, Rubicon sold all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD (“RST”). The sole asset of RST was a vacant parcel of land in Penang, Malaysia

ITEM 3. LEGAL PROCEEDINGS

From time to time, we, our subsidiaries and/or our directors and officers may be named in claims arising in the ordinary course of business. Management believes that there are no pending legal proceedings involving us or any of our subsidiaries that will, individually or in the aggregate, have a material adverse effect on our consolidated results of operations or financial condition.

There are no outstanding material matters as of December 31, 2020 and through the date of this filing.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**Market Information**

Our common stock trades on the NASDAQ Capital Market under the symbol "RBCN". The following table sets forth the high and low sales prices for our common stock as reported on the NASDAQ for the periods indicated:

	<u>High</u>	<u>Low</u>
Fiscal year ended December 31, 2020		
First Quarter	\$ 9.16	\$ 7.15
Second Quarter	\$ 9.00	\$ 7.25
Third Quarter	\$ 8.85	\$ 7.75
Fourth Quarter	\$ 10.00	\$ 8.39
Fiscal year ended December 31, 2019		
First Quarter	\$ 8.48	\$ 7.62
Second Quarter	\$ 8.62	\$ 7.50
Third Quarter	\$ 9.87	\$ 8.16
Fourth Quarter	\$ 10.09	\$ 7.93

Holders

As of February 28, 2021, our common stock was held by approximately 15 stockholders of record and there were 2,422,255 shares of our common stock outstanding.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We currently intend to retain future earnings to finance the growth and development of our business and we do not anticipate declaring or paying any cash dividends in the foreseeable future. The declaration, payment and amount of any future dividends will be made at the discretion of our Board of Directors.

ITEM 6. SELECTED FINANCIAL DATA

Disclosure under this item is not required as the registrant is a smaller reporting company.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

In November 2018, our Board of Directors authorized a program to repurchase up to \$3 million of our common stock. As of July 2020, the Company used all of the original authorized \$3 million.

On December 14, 2020, Rubicon's Board of Directors authorized an additional \$3 million for the repurchase of the Company's common stock. The timing, price and volume of repurchases will be based on market conditions, relevant securities laws and other factors. The stock repurchases may be made from time to time, through solicited or unsolicited transactions in the open market, in privately negotiated transactions or pursuant to a Rule 10b5-1 plan. The program may be terminated, suspended or modified at any time.

There was no share repurchase activity during the quarter ended December 31, 2020.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read together with our financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. You should review the "Risk Factors" section of this Annual Report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements described in the following discussion and analysis.

OVERVIEW

Rubicon Technology, Inc. ("Rubicon" or the "Company") consists of two operating subsidiaries, Rubicon Technology Worldwide LLC ("RTW") and Rubicon DTP LLC ("Direct Dose" or "DDR").

RTW is a vertically integrated, advanced materials provider specializing in monocrystalline sapphire for applications in optical and industrial systems. We design, assemble and maintain our own proprietary crystal growth furnaces to grow high-purity, low-stress, ultra-low-defect-density sapphire crystals. We use our proprietary crystal growth technology to produce high-quality sapphire products to meet our customers' exacting specifications. Sapphire is a desirable material for high-performance applications due to its hardness and strength, transparency in the visible and infrared spectrum, thermal conductivity, thermal shock resistance, abrasion resistance, high melting point and chemical inertness. As a result, it is ideally suited for extreme environments in a range of industries where material durability is just as important as optical clarity. We believe that we continue to have a reputation as one of the highest quality sapphire producers in the market. We provide optical and industrial sapphire products in a variety of shapes and sizes, including round and rectangular windows and blanks, domes, tubes and rods.

Historically, RTW has also provided sapphire products to the LED and mobile device markets, which are the largest markets for sapphire. However, given competitive pressures in those markets, in the fourth quarter of 2016 we announced our decision to limit our focus to the optical and industrial sapphire markets and exit the LED market. Following this decision, we closed our Malaysia facility, and scaled down and consolidated our remaining operations in the U.S. In 2018 and 2019, we completed individual sales and held auctions for assets located in Malaysia and at each of our U.S. properties, resulting in the sale of certain of our excess equipment and consumable assets. The Company entered into an agreement for the sale of the Malaysia facility in December 2019. In June 2020, the Company completed the sale of its Malaysian facility for net proceeds of approximately \$4.8 million after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses. The Company recorded a gain on the disposal of the Malaysian facility of approximately \$1.8 million. In December 2020, Rubicon sold all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD. The company recorded a gain on the sale of \$261,000. We are continuing to pursue the sale of our vacant parcel of land located in Batavia, Illinois. The timing on the sale of this real estate is difficult to predict.

Our sapphire business operates in a very competitive market. Our ability to expand our optical and industrial business and the acceptance of new product offerings are difficult to predict. Our total sales backlog was approximately \$747,000 and \$1,625,000 as of December 31, 2020 and 2019, respectively.

In addition, our current optical and industrial sapphire business serves smaller markets than our historical undertakings, therefore, we are actively evaluating the acquisition of profitable companies outside of the sapphire market to utilize our substantial NOL carryforwards.

In May 2019, the Company established Direct Dose and acquired certain assets, hired employees and sublet a facility from a pharmacy that was in the process of liquidation. Direct Dose was launched as a start-up pharmacy primarily to deliver medications and vitamins to patients being discharged from skilled nursing facilities. As a result of the COVID-19 pandemic, patient census at skilled nursing facilities plummeted and DDRX started to work with home health care agencies for customer acquisitions.

Since RTW and Direct Dose serve smaller markets than our historical undertakings, we are actively evaluating the acquisition of profitable companies in order to utilize our substantial net operating loss ("NOL") tax carryforwards.

Historically, we have earned, and believe that in the future we will continue to earn, a substantial portion of our revenue from a small number of customers. For the year ended December 31, 2020, we had four customers individually that accounted for approximately 21%, 13%, 11% and 10% of revenue. For the year ended December 31, 2019, we had three customers individually that accounted for approximately 31%, 15% and 11% of revenue. Our principal customers have been defense subcontractors, industrial manufacturers, fabricators and resellers. Although we are attempting to diversify and expand our customer base, we expect our sales to continue to be concentrated among a small number of customers. However, we also expect that our significant customers may change from time to time. No other customer accounted for 10% or more of our revenues during the years ended December 31, 2020 and 2019 other than those referred to above.

We sell our products on a global basis and historically derived a significant portion of our revenue from customers outside of the U.S., with the majority of our sales to the Asian and European markets. Following the decision to limit our focus to the optical and industrial sapphire markets, a major source of our revenue is derived from the North American market. For the year ended December 31, 2020, the North American and other markets accounted for 90% and 10% of our revenue, respectively. For the year ended December 31, 2019, the North American and other markets accounted for 94% and 6% of our revenue, respectively. All our revenue and corresponding accounts receivable are denominated in U.S. dollars. For more information about our revenues by geographic region, see Note 2 – Segment Information of our Consolidated Financial Statements included in this Annual Report on Form 10-K.

Financial operations

Revenue. RTW's revenue consists of sales of optical and industrial sapphire products sold as blanks or polished windows. Products are made to varying specifications, such as crystal planar orientations and thicknesses. With the focus on smaller optical and industrial markets and the consolidation of our operations in the U.S., we expect in future periods our revenue will continue to be primarily from the sale of optical materials. We recognize revenue once the performance obligation is satisfied, when the product is manufactured to the customer's specification and based upon shipping terms, title, and control of the product and risk of loss transfer to the customer. Delays in product orders or changes to the timing of shipments could cause our quarterly revenue to vary significantly. All of our revenue and corresponding accounts receivable are denominated in U.S. dollars. Substantially all our revenue is generated by our direct sales team and we expect this to continue in the future.

Cost of goods sold. Our cost of goods sold consists primarily of manufacturing materials, labor, manufacturing related overhead such as utilities, depreciation, rent, provisions for excess and obsolete inventory reserves, idle plant charges, outsourcing costs, freight and warranties. We purchase materials and supplies to support current and future demand for our products. We are subject to variations in the cost of consumable assets from period to period because we do not have long-term fixed-price agreements with our suppliers. We currently outsource some of our production processes and needs.

Gross profit (loss). Our gross profit (loss) has been and will continue to be affected by a variety of factors, including average sales prices of our products, product mix, our ability to reduce manufacturing costs, idle plant charges and fluctuations in the costs of electricity, production supplies and other manufacturing overhead costs.

General and administrative expenses. General and administrative expenses ("G&A") consist primarily of compensation and associated costs for employees in finance, information technology and administrative activities, charges for accounting, legal services, insurance and stock-based compensation.

Sales and marketing expenses. Sales and marketing expenses consist primarily of salaries and associated costs for employees engaged in sales activities, product samples, charges for participation in trade shows and travel.

(Gain) loss on sale or disposal of assets. (Gain) loss on sale or disposal of assets represents the difference between the amount of proceeds from sale of our property, equipment and consumable assets and their respective net book values. When the amount of proceeds exceeds the net book value of an underlying asset, we record this favorable variance as a gain on sale or disposal of assets. Alternatively, when the net book value of an asset exceeds the amount of proceeds recovered from sale or disposal of this asset, such unfavorable variance is recorded as a loss on sale or disposal of assets.

Other income (expense). Other income (expense) consists of interest income and gains and losses on investments and currency translation.

Provision for income tax. We account for income taxes under the asset and liability method whereby the expected future tax consequences of temporary differences between the book value and the tax basis of assets and liabilities are recognized as deferred tax assets and liabilities, using enacted tax rates in effect for the year in which the differences are expected to be recognized. Our analysis of ownership changes that limit the utilization of our NOL carryforwards as of December 31, 2020, shows no impact on such utilization. We are in a cumulative loss position for the past three years which is considered significant negative evidence that is difficult to overcome on a "more likely than not" standard through objectively verifiable data. Based on an evaluation in accordance with the accounting standards, as of December 31, 2020 and 2019, a valuation allowance has been recorded against the net U.S. and Malaysia deferred tax assets in order to measure only the portion of the deferred tax assets that are more likely than not to be realized based on the weight of all the available evidence. Until an appropriate level of sustained profitability is attained, we expect to maintain a full valuation allowance on our U.S. and Malaysia net deferred tax assets. Any U.S. and Malaysia tax benefits or tax expense recorded on the Consolidated Statement of Operations will be offset with the corresponding adjustment from the use of the NOL carryforward asset which currently has a full valuation allowance. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

Stock-based compensation. The majority of our stock-based compensation relates primarily to our Board of Directors, executive and administrative personnel and is accounted for as a G&A expense. For the years ended December 31, 2020 and 2019, our stock-based compensation expense was \$199,000 and \$523,000, respectively.

RESULTS OF OPERATIONS

The following table sets forth our statements of operations for the periods indicated:

	Year ended December 31,	
	2020	2019
	(in millions)	
Revenue	\$ 4.5	\$ 3.5
Cost of goods sold	3.3	2.4
Gross profit (loss)	1.2	1.1
Operating expenses:		
General and administrative	2.5	2.5
Sales and marketing	0.3	0.4
(Gain) loss on sale or disposal of assets	(2.1)	(0.6)
Total operating expenses	0.7	2.3
Income (loss) from operations	0.5	(1.2)
Other (expense) income	(1.6)	0.1
Income (loss) before income taxes	(1.1)	(1.1)
Income tax expense	—	—
Net income (loss)	\$ (1.1)	\$ (1.1)

18

The following table sets forth our statements of operations as a percentage of total revenue for the periods indicated:

	Year ended December 31,	
	2020	2019
Revenue	100%	100%
Cost of goods sold	73	69
Gross profit (loss)	27	31
Operating expenses:		
General and administrative	56	71
Sales and marketing	7	11
(Gain) loss on sale or disposal of assets	(47)	(17)
Total operating expenses	16	65
Income (loss) from operations	11	(34)
Other income	(35)	2
Income (loss) before income taxes	(24)	(32)
Income tax expense	—	—
Net income (loss)	(24)%	(32)%

Comparison of years ended December 31, 2020 and 2019

Revenue. Revenue was \$4.5 million for the year ended December 31, 2020, and \$3.5 million for the year ended December 31, 2019, an increase of \$940,000. This increase was primarily the result of a \$671,000 increase in sales from DDRX which had a full year of operations in 2020 compared to eight months in the prior year. Revenue from our optical and industrial sapphire business also increased in 2020 by \$269,000 due to the timing of shipments.

Gross profit (loss). Gross profit was \$1.2 million for the year ended December 31, 2020 and \$1.1 million for the year ended December 31, 2019, an increase of \$158,000. There was an increase in gross profit of \$131,000 primarily due to increase sales and the full year inclusion of Direct Dose in 2020 as compared to only operating for eight months in 2019 and an increase of \$27,000 in RTW gross profit resulting from a \$345,000 higher gross profit due to increased RTW sales and lower idle plant expense, offset by \$318,000 primarily resulting from a higher production scrap expense due to the usage of lower quality boules.

General and administrative expenses. General and administrative expenses were \$2.47 million and \$2.55 million for the years ended December 31, 2020 and 2019 respectively, a decrease of \$78,000. This decrease was the result of the effects of the COVID-19 pandemic and cost containment measures implemented by the Company which lowered spending for salary and travel together with lower bad debt expense, caused the reduction of general and administrative expense at RTW by \$107,000 which was offset by an increase in Direct Dose general and administrative expenses of \$29,000 due to the inclusion of a full year in 2020 of such expenses.

Sales and marketing expenses. Sales and marketing expenses were \$325,000 and \$361,000 for the years ended December 31, 2020 and 2019, respectively, a decrease of \$36,000. The decrease in sales and marketing expenses was primarily attributable to a decrease in employee compensation costs of \$19,000 on lower headcount and a decrease in travel and other costs related to sales and marketing of \$17,000.

(Gain) loss on sale or disposal of assets. In June 2020, the Company completed the sale of its Malaysian facility resulting in net proceeds of approximately \$4.8 million after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses. The Company recorded a gain on the disposal of the Malaysian facility of approximately \$1.8 million. In December 2020, Rubicon sold all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD for gross proceeds of approximately \$775,000. The Company recorded a gain from such stock sale of \$261,000.

In 2019, the Company disposed of its remaining manufacturing equipment located at its Malaysian facility, resulting in a gain on disposal of \$302,000, and sold other excess equipment located in the Company's Bensenville facility for \$76,000. In addition, the Company recorded a gain on sale or disposal of assets of \$200,000, which was attributable to a partial reimbursement for a dispute related to the purchase of equipment in 2016 which was never delivered.

19

Long-lived asset impairment charges. We did not record any additional asset impairment expenses for the years ended December 31, 2020 and December 31, 2019. We will continue to assess our long-lived assets to ensure the carrying amount of these assets is still appropriate given any changes in the asset usage, marketplace and other factors used in determining the current fair value.

Other income (expense). Other income (expense) was \$(1,580,000) and \$125,000 for the years ended December 31, 2020 and 2019, respectively, a change of \$(1,705,000). This decrease in 2020 of other income primarily resulted from the difference of realized and unrealized losses on investments of \$1,488,000, lower interest income of \$353,000, offset by an increase in gains on foreign currency translation of \$136,000.

Income tax (expense) benefit. We are subject to income taxes in the United States and Malaysia. On a quarterly basis, we assess the recoverability of deferred tax assets and the need for a valuation allowance. For the year ended December 31, 2020, a valuation allowance has been included in the 2020 forecasted effective tax

rate. As of December 31, 2020, we continue to be in a three-year cumulative loss position; therefore, as of December 31, 2020, we maintained a full valuation allowance on our United States and Malaysia net deferred tax assets and until an appropriate level of profitability is attained, we expect to maintain a full valuation allowance going forward. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the "Act") which, among other provisions, reduced the U.S. corporate tax rate from 35% to 21% effective January 1, 2018. The SEC issued guidance, Staff Accounting Bulletin 118, on accounting for the tax effects of the Act. The guidance allowed us to record provisional amounts for those impacts, with the requirement that the accounting be completed in a period not to exceed one year from the date of enactment. We have completed our accounting for the tax effects of the enactment of the Act. The deemed inclusion from the repatriation tax was \$5.0 million at the time the calculation was finalized for the tax return. As we are in a full valuation allowance position (as described above), an equal benefit adjustment was recorded for the impact of the increase of the deemed repatriation tax. The tax provision for the years ended December 31, 2020 and 2019 is based on an estimated combined statutory effective tax rate. For the year ended December 31, 2020 and 2019, we recorded a tax expense of \$13,000 and \$22,000, respectively, for an effective tax rate of 1.0% and 2.0%, respectively. For the years ended December 31, 2020 and 2019, the difference between our effective tax rate and the U.S. federal 21% statutory rate and state 7.4% (net of federal benefit) statutory rate was primarily related to the change in our U.S. and Malaysia NOL valuation allowances, U.S. R&D credit, Malaysia foreign tax rate differential and Malaysia withholding taxes.

At December 31, 2020, we had separate Federal, Illinois and Indiana NOL carryforwards of \$191.3 million, \$196.0 million and \$322,000, respectively. The Federal and Illinois NOLs began to expire in 2021 and the Indiana NOL will begin to expire in 2039. With the adoption of ASU 2016-09 in 2017, we recorded a deferred tax asset related to \$26.4 million of unrecorded Federal and State NOLs attributable to stock option exercises. NOLs attributable to the stock option exercise were fully offset by the valuation allowance (as described above). We have recorded an uncertain tax position of \$2.6 million that further reduces the net operating loss deferred tax assets reported in the financial statements. In addition, at December 31, 2020, we had Federal and Illinois research and development credits and Illinois investment tax credit of \$662,000, \$51,000 and \$370, respectively. The Illinois credits expire in 2021.

LIQUIDITY AND CAPITAL RESOURCES

We have historically funded our operations using a combination of issuances of common stock and cash generated from our operations.

As of December 31, 2020, we had cash equivalents and short-term investments totaling \$25.9 million, including cash of \$8.0 million held in deposits at major banks, \$3.1 million invested in money market funds and \$14.8 million of short-term investments in U.S. Treasury securities.

We plan to limit our capital expenditures primarily to only those required under existing obligations or as otherwise necessary to realize value from the development, commercialization or sale of products.

20

Cash provided from operating activities was \$297,000 for the year ended December 31, 2020. The Company generated a net loss of \$1,063,000, including non-cash items of \$105,000, and an increase in cash from net working capital of \$1,255,000. The net working capital increase was primarily driven by a decrease in accounts receivable related to a combination of increased collections and lower fourth quarter shipments. Additionally, lower prepaid expenses of \$204,000, from refunded security deposits and purchases against a vendor credit partially offset by increased insurance premiums also contributed to increased working capital. A decrease in accounts payable of \$235,000 related to \$400,000 payment on hold at the end of the prior year, also increased working capital.

Cash used in operating activities was \$1.2 million for the year ended December 31, 2019. During 2019, we had a net loss of \$1.1, including non-cash items of \$300,000, and a decrease in cash from net working capital of \$400,000. The net working capital cash decrease was primarily driven by an increase in the accounts receivable of \$300,000 and increased prepaid expenses and other assets of \$380,000 resulting from the timing of insurance premiums versus prior year.

Net cash provided by investing activities was \$4.5 million for the year ended December 31, 2020. This increase in net cash was the result of the sale of the Company's Malaysian facility for net proceeds of approximately \$4.8 million after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses assets, the sale of our Malaysia subsidiary for net proceeds of \$744,000, the receipt by the Company of \$1.7 million from the sales of investments, offset by the use of \$2.8 million to purchase U.S. Treasury securities and marketable securities.

Net cash used in investing activities was \$570,000 for the year ended December 31, 2019, primarily due to the purchases of investments in U.S. Treasury securities and marketable securities of \$1.6 million and the purchase of Rubicon DTP assets of \$64,000. Partially offsetting these were the proceeds of the sale of the remaining idle equipment at our Malaysia manufacturing facility, the sale of other excess equipment located in the United States and a \$200,000 payment received as partial reimbursement for a dispute related to the purchase of equipment in 2016 totaling \$764,000 and the proceeds from the sales of investment securities in the period of \$304,000.

Cash flows from financing activities

Net cash used in financing activities was \$2.4 million for the year ended December 31, 2020, driven by purchases of our treasury stock of \$2.4 million and cash used to settle net equity awards of \$48,000.

Net cash used in financing activities was \$730,000 for the year ended December 31, 2019, driven by purchases of our treasury stock of \$536,000 and cash used to settle net equity awards of \$194,000.

Future liquidity requirements

We believe that our existing cash, cash equivalents, anticipated cash flows from operating activities and proceeds from sales or lease of fixed assets will be sufficient to meet our anticipated cash needs for at least the next twelve months from the date of filing of this report. However, if our ability to generate sufficient operating cash flow or our use of cash in the next twelve months were to significantly adversely change, we may not have enough funds available to continue operating at our current level in future periods. Our cash needs include cash required to fund our operations. If the assumptions underlying our business plan regarding future revenues and expenses change, or if unexpected opportunities or needs arise, we may seek to raise additional cash by selling equity or convertible debt securities. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and these newly issued securities may have rights, preferences or privileges senior to those of existing stockholders.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in accordance with the accounting principles generally accepted in the U.S. requires us to make estimates, assumptions and judgments that affect the amounts reported in our financial statements and the accompanying notes. We base our estimates on historical experience and various other assumptions that we believe to be reasonable. Although these estimates are based on our present best knowledge of the future impact on the Company of current events and actions, actual results may differ from these estimates, assumptions and judgments.

21

We consider to be critical those accounting policies that require our most subjective or complex judgments, which often result from a need to make estimates about the effect of matters that are inherently uncertain, and that are among the most important of our accounting policies in the portrayal of our financial condition and results of operations. We believe the following to be our critical accounting policies, including the more significant estimates and assumptions used in

Foreign currency translation and transactions.

We have determined that the functional currency of Rubicon Sapphire Technology (Malaysia) SDN BHD (“RST”), which was sold in December 2020, is the U.S. dollar. RST’s assets and liabilities are translated into U.S. dollars using the re-measurement method. Non-monetary assets are translated at historical exchange rates and monetary assets are translated at exchange rates existing at the respective balance sheet dates. Translation adjustments for RST are included in determining net income (loss) for the period. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. We record these gains and losses in other income (expense).

Foreign currency transaction gains and losses are generated from the effects of exchange rate changes on transactions denominated in a currency other than our functional currency, which is the U.S. dollar. Gains and losses on foreign currency transactions are generally required to be recognized in the determination of net income (loss) for the period. We record these gains and losses in other income (expense).

Revenue recognition.

We recognize revenue in accordance with ASC Topic 606, *Revenue From Contracts with Customers* (“Topic 606”) which was adopted on January 1, 2018. We recognize revenue when performance obligations under a purchase order or signed quotation are satisfied. Our business practice commits us to manufacture and deliver product upon acceptance of a customer’s purchase order or signed quotation (“agreement”). The agreement with the customer includes specifications of the product to be delivered, price, expected ship date and payment terms. Our agreements generally do not contain variable, financing, rights of return or non-cash components. There are no up-front costs to develop the production process. The performance obligation is satisfied at the point in time (single performance obligation) when the product is manufactured to the customer’s specification, as performance does not create an asset with an alternative use to us. Accordingly, revenue is recognized when product is shipped, and control of the product, title and risk of loss transfer to a customer. We grant credit terms considering normal collection risk. If there is doubt about collection, full prepayment for the order is required. Any payments received prior to shipment are recorded as deferred revenue and included in Advance Payments in the Consolidated Balance Sheets.

We do not provide maintenance or other services and we do not have sales that involve multiple elements or deliverables.

All of our revenue is denominated in U.S. dollars.

Inventory valuation

We value our inventory at the lower of cost or net realizable value. Net realizable value is determined based on an estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal. Raw materials cost is determined using the first-in, first-out method, and work-in-process and finished goods costs are determined on a standard cost basis which includes materials, labor and overhead. We establish inventory reserves when conditions exist that suggest inventory may be in excess of anticipated demand or is obsolete based on customer required specifications. We evaluate the ability to realize the value of our inventory based on a combination of factors, including forecasted sales, estimated current and future market value and changes in customers’ product specifications. For the year ended December 31, 2020, we consumed inventory that had previously been reflected as excess or obsolete and recorded a reduction in the inventory reserve of \$44,000 and a reduction to cost of goods sold for the same amount. For the year ended December 31, 2019, we consumed inventory that had previously been reflected as excess or obsolete and recorded a reduction in the inventory reserve of \$107,000 and a reduction to cost of goods sold for the same amount. In addition, in 2020 we sold inventory that was valued at the lower of cost or market resulting in a reduction in both the lower of cost or market inventory reserve and cost of goods sold of \$21,000. In 2019 we sold inventory that was valued at the lower of cost or market resulting in a reduction in both the lower of cost or market inventory reserve and cost of goods sold of \$35,000. The excess and obsolete inventory reserve at December 31, 2020 was \$7.91 million compared to \$8.25 million at December 31, 2019.

We did not record any additional write-downs of consumable inventories for the year ended December 31, 2020 and 2019.

We did not record any additional adjustments of raw materials for the year ended December 31, 2020 and 2019, as we sold some of such raw materials at a price exceeding its book value.

Our method of estimating excess and obsolete inventory has remained consistent for all periods presented. If our recognition of excess or obsolete inventory is, or if our estimates of our inventory’s potential utility become, less favorable than currently expected, additional inventory reserves may be required.

As of December 31, 2020 and 2019, the Company made the determination that raw material inventories were such that the likelihood of significant usage within the current year was doubtful and reclassified such raw material inventories as non-current in the reported financial statements.

We determine our normal operating capacity and record as an expense costs attributable to lower utilization of equipment and staff. For the year ended December 31, 2019 we determined that we were not operating at capacity and recorded costs associated with lower utilization of equipment and staff of \$223,000. For the year ended December 31, 2020, we continued to reduce our costs attributable to lower utilization of equipment and staff due to consolidation of our operations in our Bensenville, Illinois, facility, and recorded \$132,000 of such costs.

Investments

We invest our available cash primarily in U.S. Treasury securities, investment grade commercial paper, FDIC guaranteed certificates of deposit, common stock, equity-related securities and corporate notes. Investments classified as available-for-sale debt securities are carried at fair value with unrealized gains and losses recorded in accumulated other comprehensive income (loss). Investments in equity securities are reported at fair value, with both realized and unrealized gains and losses recorded in other income (expense), in the Consolidated Statements of Operations. Investments in which we have the ability and intent, if necessary, to liquidate in order to support our current operations are classified as short-term.

We review our available-for-sale debt securities investments at the end of each quarter for other-than-temporary declines in fair value based on the specific identification method. We consider various factors in determining whether an impairment is other-than-temporary, including the severity and duration of the impairment, changes in underlying credit ratings, forecasted recovery, our ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value and the probability that the scheduled cash payments will continue to be made. When we conclude that an other-than-temporary impairment has resulted, the difference between the fair value and carrying value is written off and recorded as a charge on the Consolidated Statement of Operations. As of December 31, 2020, and 2019, no impairment was recorded.

Allowance for doubtful accounts

We estimate the allowance for doubtful accounts based on an assessment of the collectability of specific customer accounts. The determination of risk for collection is assessed on a customer-by-customer basis considering our historical experience and expected future orders with the customer, changes in payment patterns and recent information we have about the current status of our accounts receivable balances. If we determine that a specific customer is a risk for collection, we provide a specific allowance for credit losses to reduce the net recognized receivable to the amount we reasonably believe will be collected. If a receivable is deemed uncollectible, and the account balance differs from the allowance provided, the specific amount is written off to bad debt expense. We believe that based on the customers to whom we sell and the nature of our agreements with them, our estimates are reasonable. Our method of estimating collectability has remained consistent for all periods presented and with past collections experience.

Assets held for sale and long-lived assets

When circumstances, such as adverse market conditions, indicate that the carrying value of a long-lived asset may be impaired, we perform an analysis to review the recoverability of the asset's carrying value using estimates of the undiscounted cash flows (excluding interest charges) from the expected future operations of the asset. These estimates consider factors such as expected future operating income, operating trends and prospects, as well as the effects of demand, competition and other factors. If the analysis indicates that the carrying value is not recoverable from future cash flows, an impairment loss is recognized to the extent that the carrying value exceeds the estimated fair value. The estimated fair value of assets is determined using appraisal techniques which assume the highest and best use of the asset by market participants, considering the use of the asset that is physically possible, legally permissible, and financially feasible at the measurement date. Any impairment losses are recorded as operating expenses, which reduce net income.

In the year ended December 31, 2019, we completed the sale of certain excess equipment for \$490,000 in total consideration. The equipment had a total net book value of \$188,000 and we recorded a gain on disposal of \$302,000.

In June 2020, the Company completed the sale of its Malaysian facility for a net sale price of approximately \$4.8 million (based on the exchange rate on June 30, 2020 of \$1=MYR4.27) after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses. The Company recorded a gain on the disposal of the Malaysian facility of approximately \$1.8 million. In December 2020, the Company completed the sale of all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD. The company recorded a gain on such stock sale of \$261,000. We are continuing to pursue the sale of our vacant parcel of land in Batavia, Illinois. Although the timing on the sale of this real estate is difficult to predict, this property was classified as current assets held for sale at December 31, 2020 and 2019, as it is our intention to complete the sale of the Batavia, Illinois property within the next twelve-month period.

Stock-based compensation

We grant stock-based compensation in the form of stock options, restricted stock units ("RSUs") and restricted stock. We expense stock options based upon the fair value on the date of grant. We use the Black-Scholes option pricing model to determine the fair value of stock options. The determination of the fair value of stock-based payment awards on the date of grant using an option-pricing model is affected by assumptions regarding a number of complex and subjective variables. These variables include our expected stock volatility over the term of the awards, actual and projected employee stock option exercise behaviors, risk-free interest rates, forfeitures and expected dividends.

The expected term represents the weighted-average period that our stock options are expected to be outstanding and is based upon five years of historical data. We estimate the volatility of our common stock based on a five-year historical stock price. We base the risk-free interest rate that we use in the option pricing model on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options. We do not anticipate paying any cash dividends in the foreseeable future and, therefore, use an expected dividend yield of zero in the option pricing model. We are required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. The current forfeiture rate of 36.13% was based on our past history of forfeitures.

All stock options are granted at an exercise price per share equal to the closing market price of our common stock on the last market trading day prior to the date of grant. Therefore, there is no intrinsic value because the exercise price per share of each option was equal to the fair value of the common stock on the date of grant.

We used a Monte Carlo simulation model valuation technique to determine the fair value of RSUs granted in 2017 and 2018 to a key executive pursuant to an employment agreement, because the awards vest based upon achievement of market price targets of our common stock. The Monte Carlo simulation model utilizes multiple input variables that determine the probability of satisfying the market condition stipulated in the award and calculates the fair value of each RSU. The daily expected stock price volatility is based on a four-year historical volatility of our common stock. The daily expected dividend yield is based on annual expected dividend payments. The average daily risk-free interest rate is based on the three-year treasury yield as of the grant date. Each of the tranches is calculated to have its own fair value and requisite service period. The fair value of each tranche is amortized over the requisite or derived service period, which is up to four years.

We allocate stock-based compensation costs using a straight-line method which amortizes the fair value of each option on a straight-line basis over the service period, but in no event less than the amount vested.

All option grants are granted at an exercise price per share equal to the closing market price of our common stock on the day before the date of grant. Therefore, there is no intrinsic value because the exercise price per share of each option was equal to the fair value of the common stock on the date of grant. Based on the fair value of the common stock on December 31, 2020, there was \$52,000 of intrinsic value arising from 18,250 stock options exercisable or outstanding.

For more information on stock-based compensation, see Note 7 – Stock Incentive Plans to our Consolidated Financial Statements included in this Annual Report on Form 10-K.

Income tax valuation allowance

Evaluating the need for and amount of a valuation allowance for deferred tax assets often requires significant judgment and extensive analysis of all the positive and negative evidence available to determine whether all or some portion of the deferred tax assets will not be realized. A valuation allowance must be established for deferred tax assets when it is more likely than not (a probability level of more than 50%) that they will not be realized. In general, "realization" refers to the incremental benefit achieved through the reduction in future taxes payable or an increase in future taxes refundable from the deferred tax assets, assuming that the underlying deductible differences and carryforwards are the last items to enter into the determination of future taxable income. In determining our valuation allowance, we consider the source of taxable income including taxable income in prior carryback years, future reversals of existing temporary differences, the required use of tax planning strategies, and future taxable income exclusive of reversing temporary differences and carryforwards. We are in a cumulative loss position for the past three years which is considered significant negative evidence that is difficult to overcome on a "more likely than not" standard through objectively verifiable data. Under the accounting standards, verifiable evidence will have greater weight than subjective evidence such as our projections for future growth. Based on an evaluation in accordance with the accounting standards, as of December 31, 2020, a valuation allowance has been recorded against the net U.S. deferred tax assets in order to measure only the portion of the deferred tax assets that are more likely than not to be realized based on the weight of all the available evidence. Any U.S. and Malaysia tax benefit or tax expense recorded on the Consolidated Statement of Operations will be offset with a corresponding adjustment from the use of the NOL carryforward asset which currently has a full valuation allowance. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

Accounting for uncertainty in income taxes

We recognize the tax benefit from an uncertain tax position only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. At December 31, 2020 and 2019, we had \$1.1 million of unrecognized tax benefits taken or expected to be taken in a tax return that have been recorded on our financial statements as an offset to the valuation allowance related to tax positions taken in 2012. We recognize interest and/or penalties related to income tax matters in income tax expense. There were no interest or penalties related to

The Company is subject to taxation in the U.S., Malaysia and in a U.S. state jurisdiction. Due to the existence of NOL carryforwards, tax years ended December 31, 2001 through 2006, 2008, 2009 and 2012 through 2019 are open to examination by tax authorities for Federal purposes. Due to NOL carryforwards at the State level, tax years ended 2008, 2009 and 2012 through 2019 are open to examination by state tax authorities. Tax years 2013 through 2019 are open to examination by the Malaysia Inland Revenue Board.

RECENT ACCOUNTING PRONOUNCEMENTS

See Note 1 to the Consolidated Financial Statements for a discussion of new accounting standards.

OFF-BALANCE SHEET ARRANGEMENTS

None.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Disclosure under this item is not required as the registrant is a smaller reporting company.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Consolidated Financial Statements, together with the related notes and the report of independent registered public accounting firm, are set forth on the pages indicated in Item 15 of this Annual Report on Form 10-K and are incorporated by reference herein.

25

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES.

None.

ITEM 9A. CONTROLS AND PROCEDURES

Management's Evaluation of Disclosure Controls and Procedures.

An evaluation was performed under the supervision and with the participation of our management, including our chief executive officer and chief financial officer (together, our "certifying officers"), of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the year covered by this report. Disclosure controls and procedures are controls and other procedures designed to ensure that information required to be disclosed by us in our periodic reports filed with the SEC is recorded, processed, summarized and reported within the time periods specified by the SEC's rules and forms, and that the information is accumulated and communicated to our management, including the chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation, our certifying officers concluded that these disclosure controls and procedures were effective as of December 31, 2020.

Management's Report on Internal Control over Financial Reporting

The financial statements were prepared by management, which is responsible for their integrity and objectivity and for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f).

The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that:

- i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and disposition of the assets of the Company;
- ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of Consolidated Financial Statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the Consolidated Financial Statements.

There are inherent limitations in the effectiveness of any internal control, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective internal controls can provide only reasonable assurance with respect to the financial statement preparation. Further, because of changes in conditions, the effectiveness of internal controls may vary over time.

Management assessed the design and effectiveness of the Company's internal control over financial reporting as of December 31, 2020. In making this assessment, management used the criteria set forth in 2013 *Internal Control—Integrated Framework* by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on management's assessment using those criteria, as of December 31, 2020, management concluded that the Company's internal control over financial reporting was effective.

This annual report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. The Company's internal controls over financial reporting were not subject to attestation by our independent registered public accounting firm pursuant to rules of the SEC.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020, that our certifying officers concluded materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

26

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The Information required by Items 401, 405, 407(d)(4) and 407(d)(5) of Regulation S-K will be included under the captions “Proposal 1: Election of Directors,” “Executive Compensation – Executive Officers,” “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters – Section 16(a) Beneficial Ownership Reporting Compliance” and “Corporate Governance – Committees of the Board of Directors and Meetings – Audit Committee” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

We have adopted a Code of Ethics that applies to all of our employees, officers and directors. If you would like a copy our Code of Ethics, write to Investor Relations, Rubicon Technology, Inc., 900 East Green Street, Bensenville, Illinois 60106, and a copy of the Code of Ethics will be provided to you, free of charge.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 402 of Regulation S-K will be included under the captions “Executive Compensation” and “Director Compensation” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

27

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**Securities Authorized for Issuance under Equity Compensation Plans**

The following table represents securities authorized for issuance under, the Rubicon Technology Inc. 2007 Stock Incentive Plan, as amended and restated, and the Rubicon Technology Inc. 2016 Stock Incentive Plan as of December 31, 2020.

Equity Compensation Plan Information

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuances under the equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders ⁽¹⁾	65,103	\$ 6.71	296,105

(1) The Rubicon Technology Inc. 2007 Stock Incentive Plan was approved by stockholders before our initial public offering. The Rubicon Technology Inc. 2016 Stock Incentive Plan was approved by stockholders in June 2016.

The information required by Item 403 of Regulation S-K will be included under the caption “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 404 of Regulation S-K will be included under the caption “Certain Relationships and Related Party Transactions” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. The information required by Item 407(a) of Regulation S-K will be included under the caption “Corporate Governance - Director Independence” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item will be included under the caption “Ratification of Selection of Independent Registered Public Accounting Firm” in our proxy statement for our 2021 Annual Meeting of Stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

28

PART IV

ITEM 15. EXHIBITS AND CONSOLIDATED FINANCIAL STATEMENT SCHEDULES

(a) Financial statements. The following Consolidated Financial Statements are filed as part of this Annual Report on Form 10-K.

	Page
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets as of December 31, 2020 and 2019	F-3
Consolidated Statements of Operations for each of the two years in the period ended December 31, 2020	F-4
Consolidated Statements of Comprehensive Income (Loss) for each of the two years in the period ended December 31, 2020	F-5
Consolidated Statements of Stockholders' Equity for each of the two years in the period ended December 31, 2020	F-6
Consolidated Statements of Cash Flows for each of the two years in the period ended December 31, 2020	F-7
Notes to Consolidated Financial Statements	F-8

(b) Exhibits. The exhibits filed or incorporated by reference as a part of this report are listed in the Index to Exhibits which appears following the signature page to this Annual Report on Form 10-K and are incorporated by reference.

(c) Financial statement schedules not listed above have been omitted because they are inapplicable, are not required under applicable provisions of Regulation

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on March 22, 2021.

Rubicon Technology, Inc.

By /s/ Timothy E. Brog
Timothy E. Brog
President and Chief Executive Officer

KNOWN BY ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Timothy E. Brog and Kevin T. Lusardi, jointly and severally, his or her attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 22, 2021.

Signature	Title
<u>/s/ Timothy E. Brog</u> Timothy E. Brog	Director, President and Chief Executive Officer (Principal Executive Officer)
<u>/s/ Kevin T. Lusardi</u> Kevin T. Lusardi	Chief Financial Officer (Principal Financial and Accounting Officer)
<u>/s/ Michael E. Mikolajczyk</u> Michael E. Mikolajczyk	Chairman of the Board of Directors
<u>/s/ Susan Westphal</u> Susan Westphal	Director
<u>/s/ Jefferson Gramm</u> Jefferson Gramm	Director

EXHIBIT INDEX

The Exhibits listed below are filed or incorporated by reference as part of this Annual Report on Form 10-K.

Exhibit No.	Description	Incorporation by Reference
3.1	Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Exhibit 3.1 to the registrant's Registration Statement on Form S-1/A, filed on November 1, 2007 (File No. 333-145880)
3.2	Amendment No. 1 to Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Appendix A to the registrant's Definitive Proxy Statement on Schedule 14A, filed on April 29, 2011 (File No. 1-33834)
3.3	Amendment No. 2 to Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Exhibit 3.1 to the registrant's Current Report on Form 8-K, filed on May 4, 2017 (File No. 1-33834)
3.4	Second Amended and Restated Bylaws of Rubicon Technology, Inc.	Filed as Exhibit 3.3 to the registrant's Quarterly Report on Form 10-Q, filed on May 10, 2016 (File No. 1-33834)
3.5	Certificate of Designations of Series A Junior Participating Preferred Stock of Rubicon Technology, Inc. filed with the Secretary of State of Delaware on December 18, 2017.	Filed as Exhibit 3.1 to the registrant's Current Report on Form 8-K, filed on December 18, 2017 (File No. 1-33834)
3.6	Amendment No. 3 to Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Exhibit 3.1 to the registrant's Current Report on Form 8-K, filed on May 15, 2018 (File No. 1-33834)
4.1	Specimen Common Stock Certificate	Filed as Exhibit 4.1 to the registrant's Registration Statement on Form S-1/A, filed on November 13, 2007 (File No. 333-145880)
4.2	Rights Agreement dated as of December 18, 2017, between Rubicon Technology, Inc. and American Stock Transfer & Trust Company, LLC, which includes the Form of Certificate of Designations of Series A Junior Participating Preferred Stock as Exhibit A, the Form of Right Certificate as Exhibit B and the Summary of Rights to Purchase Preferred Shares as Exhibit C.	Filed as Exhibit 4.1 to the registrant's Current Report on Form 8-K, filed on December 18, 2017 (File No. 1-33834)
4.3	Amendment No. 1 to the Rights Agreement, dated as of December 18, 2020, between Rubicon Technology, Inc. and American Stock Transfer & Trust Company, LLC	Filed as Exhibit 4.1 to the registrant's Current Report on Form 8-K, filed on December 18, 2020 (File No. 1-33834)
10.1*	Rubicon Technology, Inc. 2007 Stock Incentive Plan, as amended and restated, effective March 23, 2011	Filed as Exhibit 10.2 to the registrant's Annual Report on Form 10-K, filed on March 13, 2014 (File No. 1-33834)

10.2*	Rubicon Technology, Inc. 2016 Stock Incentive Plan	Filed as Appendix A to the registrant's Definitive Proxy Statement on Schedule 14A, filed on May 18, 2016 (File No. 1-33834)
10.3(a)*	Form of Notice of Stock Option Grant and Stock Option Agreement pursuant to Rubicon Technology, Inc. 2016 Stock Incentive Plan	Filed as Exhibit 10.2 to the registrant's Quarterly Report on Form 10-Q, filed on August 9, 2016 (File No. 1-33834)
10.3(b)*	Form of Non-Employee Director Restricted Stock Agreement pursuant to Rubicon Technology, Inc. 2016 Stock Incentive Plan	Filed as Exhibit 10.3 to the registrant's Quarterly Report on Form 10-Q, filed on August 9, 2016 (File No. 1-33834)
10.3(c)*	Form of Restricted Stock Unit Agreement pursuant to Rubicon Technology, Inc. 2016 Stock Incentive Plan (with time-based vesting)	Filed as Exhibit 10.4 to the registrant's Quarterly Report on Form 10-Q, filed on August 9, 2016 (File No. 1-33834)
10.4*	Form of Indemnification Agreement for Directors and Executive Officers	Filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q, filed on May 8, 2015 (File No. 1-33834)
10.5*	Executive Employment Agreement by and between Rubicon Technology, Inc. and Timothy E. Brog, dated as of March 1, 2017	Filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K, filed on March 16, 2017 (File No. 1-33834)
10.6*	Amended and Restated Executive Employment Agreement by and between Rubicon Technology, Inc. and Timothy E. Brog, dated as of May 12, 2017	Filed as Exhibit 10.2 to the registrant's Quarterly Report on Form 10-Q, filed on May 12, 2017 (File No. 1-33834)
10.7	Stockholder's Agreement dated as of November 16, 2017, by and among Rubicon Technology, Inc. and Bandera Partners LLC, Bandera Master Fund L.P., Gregory Bylinsky and Jefferson Gramm	Filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K, filed on November 16, 2017 (File No. 1-33834)
10.8	Asset Purchase Agreement, dated as of May 17, 2019, by and among Wellfount, Corporation, Rubicon DTP LLC and Rubicon Technology, Inc.	Filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q, filed on August 14, 2019 (File No. 1-33834)
10.9	Sale and Purchase Agreement, dated as of December 19, 2019, by and among Rubicon Sapphire Technology (Malaysia) SDN. BHD., Rubicon Technology, Inc. and Computime (Malaysia) SDN. BHD	Filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K, filed on December 19, 2019 (File No. 1-33834)
10.10	Share Sale Agreement, dated December 9, 2020 between Rubicon Technology, Inc. and Kang Lan Hiang	Filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed on December 9, 2020 (File No. 1-33834)
10.11*	Executive Employment Agreement by and between Rubicon Technology, Inc. and Kevin T. Lusardi, dated as of March 17, 2021	Filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K, filed on March 22, 2021 (File No. 1-33834)

31

21.1**	Subsidiaries of the Company
23.1**	Consent of Independent Registered Public Accounting Firm
24.1**	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)
31.1**	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2**	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS**	XBRL Instance Document
101.SCH**	XBRL Taxonomy Extension Schema Document
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	XBRL Taxonomy Extension Presentation Document
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document

* Management contract or compensatory plan or arrangement of the Company.

** Submitted electronically with this Annual Report on Form 10-K.

32

Rubicon Technology, Inc.

INDEX TO FINANCIAL STATEMENTS

Consolidated Balance Sheets as of December 31, 2020 and 2019	F-3
Consolidated Statements of Operations for each of the two years in the period ended December 31, 2020	F-4
Consolidated Statements of Comprehensive Income (Loss) for each of the two years in the period ended December 31, 2020	F-5
Consolidated Statements of Stockholders' Equity for each of the two years in the period ended December 31, 2020	F-6
Consolidated Statements of Cash Flows for each of the two years in the period ended December 31, 2020	F-7
Notes to Consolidated Financial Statements	F-8

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Rubicon Technology, Inc. and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Rubicon Technology, Inc. and Subsidiaries (the "Company") as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the two years in the period ended December 31, 2020, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2020 and 2019, and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

The Company establishes inventory reserves when conditions exist to suggest inventory may be in excess of anticipated demand or is obsolete based on customer specifications. The Company's management evaluates the ability to realize the net carrying value of its inventory based on a combination of factors, including forecasted sales, estimated current market value and changes in customers' product specifications. Additionally, the Company reduces the carrying values of its inventories for differences between the cost and the estimated net realizable value, which is determined based on an estimated selling price less estimated costs of completion and disposal. Based on the likelihood of expected usage within the next operating cycle, generally 12 months, management makes a determination on the appropriate presentation of inventory as a current or non-current asset in the financial statements.

We identified the valuation and presentation of inventory as a critical audit matter. Auditing management judgment regarding forecasted sales, estimated current market value and anticipated customer product specifications, involved a high degree of subjectivity.

The primary procedures we performed to address this critical audit matter included obtaining an understanding of management's process and testing the estimated inventory write-downs and expected consumption within one year from December 31, 2020 for presentation purposes. We evaluated the reasonableness of management's forecasted consumption by comparing these forecasts to historical sales and inventory consumption, open orders, and performed a retrospective review of management's estimates from the prior period.

/s/ Marcum LLP
 Marcum LLP

We have served as the Company's auditor since 2017.

Chicago, Illinois
 March 22, 2021

Rubicon Technology, Inc.

Consolidated Balance Sheets

	As of	
	December 31,	
	2020	2019
	(in thousands, other than share data)	
Assets		
Cash and cash equivalents	\$ 11,130	\$ 8,709
Restricted cash	—	171
Short-term investments	14,748	15,458
Accounts receivable, net	386	1,053

Inventories	1,073	1,710
Other inventory supplies	140	140
Prepaid expenses and other current assets	284	488
Assets held for sale	529	3,957
Total current assets	28,290	31,686
Inventories, non-current	468	468
Property and equipment, net	2,482	2,647
Total assets	\$ 31,240	\$ 34,801
Liabilities and stockholders' equity		
Accounts payable	\$ 497	\$ 733
Accrued payroll	211	53
Accrued and other current liabilities	201	344
Corporate income and franchise taxes	307	296
Accrued real estate taxes	71	114
Advance payments	18	16
Total current liabilities	1,305	1,556
Commitments and contingencies (see Note 10)		
Stockholders' equity		
Preferred stock, \$0.001 par value, 1,000,000 undesignated shares authorized, no shares issued or outstanding	—	—
Common stock, \$0.001 par value 8,200,000 shares authorized; 2,971,283 and 2,955,253 shares issued; 2,422,255 and 2,702,171 shares outstanding	29	29
Additional paid-in capital	376,456	376,306
Treasury stock, at cost, 549,028 and 253,082 shares	(15,147)	(12,749)
Accumulated other comprehensive loss	—	(1)
Accumulated deficit	(331,403)	(330,340)
Total stockholders' equity	29,935	33,245
Total liabilities and stockholders' equity	\$ 31,240	\$ 34,801

The accompanying notes are an integral part of these consolidated financial statements.

F-3

Rubicon Technology, Inc.
Consolidated Statements of Operations

	Year ended December 31,	
	2020	2019
(in thousands, other than share data)		
Revenue	\$ 4,467	\$ 3,526
Cost of goods sold	3,226	2,444
Gross profit (loss)	1,241	1,082
Operating expenses:		
General and administrative	2,470	2,548
Sales and marketing	325	361
(Gain) loss on sale or disposal of assets and subsidiary	(2,084)	(577)
Income (loss) from operations	530	(1,250)
Other (expense) income:		
Interest income	108	460
Realized gain (loss) on marketable securities	(1,824)	(165)
Unrealized gain (loss) on marketable securities	—	(171)
Realized gain (loss) on foreign currency translation	136	1
Total other (expense) income	(1,580)	125
Income (loss) before income taxes	(1,050)	(1,125)
Income tax expense	(13)	(22)
Net income (loss)	\$ (1,063)	\$ (1,147)
Net income (loss) per common share		
Basic	\$ (0.43)	\$ (0.42)
Diluted	\$ (0.43)	\$ (0.42)
Weighted average common shares outstanding used in computing net income (loss) per common share		
Basic	2,499,690	2,707,811
Diluted	2,499,690	2,707,811

The accompanying notes are an integral part of these consolidated financial statements.

F-4

Rubicon Technology, Inc.
Consolidated Statements of Comprehensive Income (Loss)

	Year ended December 31,	
	2020	2019
(in thousands)		
Net income (loss)	\$ (1,063)	\$ (1,147)
Other comprehensive income:		

Unrealized gain (loss) on investments, net of taxes		1	—
Unrealized gain (loss) on currency translation		—	1
Other comprehensive income (loss)		1	1
Comprehensive income (loss)		<u>\$ (1,062)</u>	<u>\$ (1,146)</u>

The accompanying notes are an integral part of these consolidated financial statements.

F-5

Rubicon Technology, Inc.

Consolidated Statements of Stockholders' Equity

	Common stock		Treasury stock		Additional paid-in capital	Stockholders' equity		
	Shares	Amount	Shares	Amount		Accum other comp inc.	Accum deficit	Total stockholders' equity
	(in thousands other than share data)							
Balance at January 1, 2019	2,919,542	\$ 29	(185,941)	\$ (12,213)	\$ 375,979	\$ (2)	\$ (329,193)	\$ 34,600
Stock-based compensation	—	—	—	—	508	—	—	508
Restricted stock issued	2,538	—	—	—	15	—	—	15
Common stock issued, net of shares withheld for employee taxes	33,173	—	—	—	(196)	—	—	(196)
Purchase of treasury stock, at cost	—	—	(67,141)	(536)	—	—	—	(536)
Unrealized gain on investments, net of tax	—	—	—	—	—	1	—	1
Net loss	—	—	—	—	—	—	(1,147)	(1,147)
Balance at December 31, 2019	2,955,253	\$ 29	(253,082)	\$ (12,749)	\$ 376,306	\$ (1)	\$ (330,340)	\$ 33,245
Stock-based compensation	—	—	—	—	168	—	—	168
Restricted stock issued	3,597	—	—	—	30	—	—	30
Common stock issued, net of shares withheld for employee taxes	12,433	—	—	—	(48)	—	—	(48)
Purchase of treasury stock, at cost	—	—	(295,946)	(2,398)	—	—	—	(2,398)
Unrealized gain on investments net of taxes	—	—	—	—	—	1	—	1
Net loss	—	—	—	—	—	—	(1,063)	(1,063)
Balance at December 31, 2020	2,971,283	\$ 29	(549,028)	\$ (15,147)	\$ 376,456	\$ —	\$ (331,403)	\$ 29,935

The accompanying notes are an integral part of these consolidated financial statements.

F-6

Rubicon Technology, Inc.

Consolidated Statements of Cash Flows

	Year ended December 31,	
	2020	2019
	(in thousands)	
Cash flows from operating activities		
Net income (loss)	\$ (1,063)	\$ (1,147)
Adjustments to reconcile net income (loss) to net cash used in operating activities		
Depreciation and amortization	167	169
Net (gain) loss on sale or disposal of assets and subsidiary	(2,084)	(577)
Unrealized (gain) loss on equity investments	—	171
Realized (gain) loss on equity investments	1,824	—
Stock-based compensation	198	523
Changes in operating assets and liabilities:		
Accounts receivable	666	(320)
Inventories	637	(48)
Other inventory supplies	—	42
Prepaid expenses and other assets	204	(380)
Accounts payable	(236)	332
Accrued payroll	158	25
Corporate income and franchise taxes	9	(7)
Accrued real estate taxes	(42)	11
Advance payments	2	(22)
Accrued and other current liabilities	(143)	(2)
Net provided by (cash used) in operating activities	<u>297</u>	<u>(1,230)</u>
Cash flows from investing activities		
Purchases of assets	(2)	(64)
Proceeds from sale or disposal of assets	4,909	765
Proceeds from sale or disposal of subsidiary	744	—
Purchase of investments	(2,782)	(1,575)
Proceeds from sale of investments	1,667	304
Net cash provided by (used in) provided by investing activities	<u>4,536</u>	<u>(570)</u>
Cash flows from financing activities		
Taxes paid related to net share settlement of equity awards	(48)	(194)
Purchases of treasury stock	(2,399)	(536)
Net cash used in financing activities	<u>(2,447)</u>	<u>(730)</u>
Net effect of currency translation	(136)	—

Net increase (decrease) in cash, cash equivalents and restricted cash	2,250	(2,530)
Cash, cash equivalents and restricted cash, beginning of year	8,880	11,410
Cash, cash equivalents and restricted cash, end of year	<u>\$ 11,130</u>	<u>\$ 8,880</u>
Supplemental disclosure of cash flow - none		

The accompanying notes are an integral part of these consolidated financial statements.

F-7

Rubicon Technology, Inc.

Notes to Consolidated Financial Statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Description of business

Rubicon Technology, Inc., a Delaware corporation (the “Company”), consists of two operating subsidiaries, Rubicon Technology Worldwide LLC (“RTW”) and Rubicon DTP LLC (“Direct Dose” or “DDRX”).

RTW is a vertically integrated, advanced materials provider specializing in monocrystalline sapphire for applications in optical and industrial systems. RTW sells its products on a global basis to customers in North America, Europe and Asia. RTW maintains its operating facility in the Chicago metropolitan area.

Direct Dose is a start-up pharmacy primarily delivering medications and vitamins to patients being discharged from skilled nursing facilities. Direct Dose maintains its operating facility in the Indianapolis metropolitan area.

Principles of consolidation

The Consolidated Financial Statements include the accounts of the Company and its wholly owned subsidiaries, Rubicon Technology Worldwide LLC, Rubicon DTP LLC, Rubicon Technology BP LLC, Rubicon Sapphire Technology (Malaysia) SDN BHD and Rubicon Technology Hong Kong Limited. In December 2020, the Company sold all of the outstanding shares of capital stock of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN BHD. All intercompany transactions and balances have been eliminated in consolidation.

A summary of the Company’s significant accounting policies applied in the preparation of the accompanying Consolidated Financial Statements follows.

Cash and cash equivalents

The Company considers all unrestricted highly liquid investments immediately available to be cash equivalents. Cash equivalents primarily consist of time deposits with banks, unsettled trades and brokerage money market accounts.

Restricted cash

A summary of the Company’s restricted cash at December 31, 2020 and 2019, is as follows:

	As of	
	December 31,	
	2020	2019
	(in thousands)	
Fixed deposits	—	171
	<u>\$ —</u>	<u>\$ 171</u>

Foreign currency translation and transactions

The Company has determined that the functional currency of Rubicon Sapphire Technology (Malaysia) SDN BHD is the U.S. dollar. Rubicon Sapphire Technology (Malaysia) SDN BHD’s assets and liabilities are translated into U.S. dollars using the remeasurement method. Non-monetary assets are translated at historical exchange rates and monetary assets are translated at exchange rates existing at the respective balance sheet dates. Translation adjustments for Rubicon Sapphire Technology (Malaysia) SDN BHD are included in determining net income (loss) for the period. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. The Company records these gains and losses in other income.

F-8

Foreign currency transaction gains and losses are generated from the effects of exchange rate changes on transactions denominated in a currency other than the functional currency of the Company, which is the U.S. dollar. Gains and losses on foreign currency transactions are generally required to be recognized in the determination of net income (loss) for the period. The Company records these gains and losses in other income.

Investments

We invest our available cash primarily in U.S. Treasury securities, investment grade commercial paper, FDIC guaranteed certificates of deposit, common stock, equity-related securities and corporate notes. Investments classified as available-for-sale debt securities are carried at fair value with unrealized gains and losses recorded in accumulated other comprehensive income (loss). Investments in equity securities are reported at fair value, with both realized and unrealized gains and losses recorded in other income (expenses), in the Consolidated Statements of Operations. Investments in which the Company has the ability and intent, if necessary, to liquidate in order to support the current operations are classified as short-term.

The Company reviews its available-for-sale debt securities investments at the end of each quarter for other-than-temporary declines in fair value based on the specific identification method. The Company considers various factors in determining whether an impairment is other-than-temporary, including the severity and duration of the impairment, changes in underlying credit ratings, forecasted recovery, its ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value and the probability that the scheduled cash payments will continue to be made. When the Company concludes that an other-than-temporary impairment has resulted, the difference between the fair value and carrying value is written off and recorded as a charge on the Consolidated Statements of Operations. As of December 31, 2020, and 2019, no impairment was recorded.

Purchases of Equity Securities by the Issuer

In November 2018, the Company’s Board of Directors authorized a program to repurchase up to \$3 million of its common stock. In July 2020, the Company used all of the original authorized \$3 million.

On December 14, 2020, Rubicon's Board of Directors authorized an additional \$3 million for the repurchase of the Company's common stock. The timing, price and volume of repurchases will be based on market conditions, relevant securities laws and other factors. The stock repurchases may be made from time to time, through solicited or unsolicited transactions in the open market, in privately negotiated transactions or pursuant to a Rule 10b5-1 plan. The program may be terminated, suspended or modified at any time. There can be no assurance as to the number of shares of common stock repurchased. The Company records treasury stock purchases under the cost method whereby the entire cost of the acquired stock is recorded as treasury stock.

Share repurchase activity during the year ended December 31, 2020, was as follows:

Periods	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced program	Approximate dollar value of shares that may yet be purchased under the program (in thousands)
January 1, 2020, to December 31, 2020	295,946	\$ 8.10	295,546	\$ 3,000
Total	295,946			\$ 3,000

F-9

Accounts receivable

The majority of the Company's accounts receivable are due from defense subcontractors, industrial manufacturers, fabricators and resellers. Credit is extended based on an evaluation of the customer's financial condition. Accounts receivable are due based on contract terms and at stated amounts due from customers, net of an allowance for doubtful accounts. Losses from credit sales are provided for in the financial statements.

Accounts outstanding longer than the contractual payment terms are considered past due. The Company determines its allowance by considering a number of factors, including the length of time a customer's account is past due, the customer's current ability to pay and the condition of the general economy and industry as a whole. The Company writes off accounts receivable when they are deemed uncollectible and such write-offs, net of payments received, are recorded as a reduction to the allowance.

The following table shows the activity of the allowance for doubtful accounts:

	Year ended December 31,	
	2020	2019
	(in thousands)	
Beginning balance	\$ 40	\$ 7
Charges to costs and expenses	(20)	33
Account write-offs, less recoveries	(17)	—
Ending balance	\$ 3	\$ 40

Inventories

Inventories are valued at the lower of cost or net realizable value. Net realizable value is determined based on an estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal. Raw materials cost is determined using the first-in, first-out method, and work-in-process and finished goods costs are determined on a standard cost basis, which includes materials, labor and overhead. The Company reduces the carrying value of its inventories for differences between the cost and the estimated net realizable value, taking into account usage, expected demand, technological obsolescence and other relevant information.

The Company establishes inventory reserves when conditions exist that suggest inventory may be in excess of anticipated demand or is obsolete based on customer specifications. The Company evaluates the ability to realize the value of its inventory based on a combination of factors, including forecasted sales, estimated current and future market value and changes in customers' product specifications. The Company's method of estimating excess and obsolete inventory has remained consistent for all periods presented. The Company also carries a lower of cost or market inventory reserve based on net realizable value using most recent sales prices to determine market value. As of December 31, 2020 and 2019, the balance of the lower of cost or market reserve was \$51,000 and \$72,000, respectively, representing a decrease of \$21,000 resulting from sales of related reserved for inventory. In addition, in 2020 we sold inventory that was valued at the lower of cost or market resulting in a reduction in both the lower of cost or market inventory reserve and cost of goods sold of \$21,000. In 2019 we sold inventory that was valued at the lower of cost or market resulting in a reduction in both the lower of cost or market inventory reserve and cost of goods sold of \$35,000.

In 2019 and 2020, the Company used some of its previously written down two-inch diameter core material in production of optical and industrial sapphire wafers and did not record any additional adjustments for the years ended December 31, 2019 and December 31, 2020.

The Company evaluates the amount of raw material needed for future production based on expected crystal growth production needed to meet anticipated sales. The Company did not record any write-downs of its raw materials inventory for the years ended December 31, 2019 and December 31, 2020.

F-10

Inventories are composed of the following:

	As of December 31,	
	2020	2019
	(in thousands)	
Raw materials	\$ 468	\$ 468
Work-in-process	614	901
Finished goods	459	809
	\$ 1,541	\$ 2,178

As of December 31, 2020 and 2019, the Company made the determination that raw material inventories were such that the likelihood of significant usage within the current year was doubtful and reclassified such raw material inventories as non-current in the reported financial statements.

Other inventory supplies

The Company's other inventory supplies include stock of consumable assets and spare parts used in the manufacturing process.

Assets held for sale

An asset is considered to be held for sale when all of the following criteria are met: (i) management commits to a plan to sell the asset; (ii) it is unlikely that the disposal plan will be significantly modified or discontinued; (iii) the asset is available for immediate sale in its present condition; (iv) actions required to complete the sale of the asset have been initiated; (v) sale of the asset is probable and the completed sale is expected to occur within one year; and (vi) the asset is actively being marketed for sale at a price that is reasonable given its current market value.

A long-lived asset classified as held for sale is measured at the lower of its carrying amount or fair value less cost to sell. If the long-lived asset is newly acquired, the carrying amount of the long-lived asset is established based on its fair value less cost to sell at the acquisition date. A long-lived asset is not depreciated or amortized while it is classified as held for sale.

In the year ended December 31, 2019, we completed the sale of the remaining excess equipment located in Malaysia for total consideration of \$490,000. Such equipment had a total net book value of \$188,000, thereby resulting in a gain on disposal of \$302,000.

The Company entered into an agreement for the sale of its Malaysian facility in December 2019, which was completed in June 2020.

In June 2020, the Company completed the sale of its Malaysian facility for a net sale price of approximately \$4.8 million (based on the exchange rate on June 30, 2020 of \$1=MYR4.27) after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses. The Company recorded a gain on the disposal of the Malaysian facility of approximately \$1.8 million.

In December, 2020, the Company completed the sale of all of the outstanding shares of capital stock (the "Capital Shares") of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN. BHD. The company recorded a gain on the sale of \$261,000. The Company is continuing to pursue the sale of our vacant parcel of land in Batavia, Illinois. Although the timing on the sale or lease of this real estate is difficult to predict, this property was classified as current assets held for sale at December 31, 2020 and 2019, as it is the Company's intention to complete the sale of the Batavia Illinois property within the next twelve-month period.

F-11

Property and equipment

Property and equipment consisted of the following:

	As of December 31,	
	2020	2019
	(in thousands)	
Machinery, equipment and tooling	\$ 3,343	\$ 3,341
Buildings	1,711	1,711
Information systems	835	835
Land and land improvements	594	594
Furniture and fixtures	8	8
Total cost	6,491	6,489
Accumulated depreciation and amortization	(4,009)	(3,842)
Property and equipment, net	\$ 2,482	\$ 2,647

Property and equipment are carried at cost and depreciated over their estimated useful lives using the straight-line method. The cost of maintenance and repairs is charged to expense as incurred. Significant renewals and improvements are capitalized. Depreciation expense associated with property and equipment was \$167,000 and \$169,000 for the years ended December 31, 2020 and 2019, respectively.

The estimated useful lives are as follows:

Asset description	Life
Buildings	39 years
Machinery, equipment and tooling	3-10 years
Furniture and fixtures	7 years
Information systems	3 years

Warranty cost

The Company's sales terms include a warranty that its products will meet certain specifications. The Company records a current liability for the expected cost of warranty-related claims at the time of sale. The warranty reserve is included in accrued and other current liabilities on the Consolidated Balance Sheets.

The following table presents changes in the Company's product warranty liability:

	Year ended December 31,	
	2020	2019
	(in thousands)	
Balance, beginning of period	\$ 4	\$ 8
Charged to cost of sales	18	31
Actual product warranty expenditures	(20)	(35)
Balance, end of period	\$ 2	\$ 4

The Company does not provide maintenance or other services and it does not have sales that involve bill & hold arrangements, multiple elements or deliverables. However, the Company does provide product warranty for up to 90 days, for which the Company has accrued a warranty reserve of \$2,000 and \$4,000 for the years ended December 31, 2020 and 2019, respectively.

Fair value of financial instruments

The Company's financial instruments consist primarily of cash and cash equivalents, short-term investments, accounts receivable, and accounts payable. The carrying values of these assets and liabilities approximate their fair values due to the short-term nature of these instruments at December 31, 2020 and 2019.

Concentration of credit risks and other risks and uncertainties

Financial instruments that could potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents, restricted cash, short-term investments and accounts receivable. At December 31, 2020 the Company had no deposits at foreign financial institutions and \$1.6 million on deposit at foreign financial institutions at December 31, 2019. As of December 31, 2020, the Company had \$8 million on deposit at financial institutions in excess of amounts insured by the FDIC. This compares to a \$5.7 million as of December 31, 2019. The Company performs a periodic evaluation of these institutions for relative credit standing. The Company has not experienced any losses in such accounts and management believes it is not exposed to any significant risk of loss on these balances.

The Company uses third parties for certain finishing functions for its products, including the slicing and polishing of its sapphire crystal inventory. These types of services are only available from a limited number of third parties. The Company's ability to successfully outsource these finishing functions will substantially depend on its ability to develop, maintain and expand its strategic relationship with these third parties. As a result, the Company may be unable to meet the demand for its products, which could have a material adverse impact on the Company.

Concentration of credit risk related to revenue and accounts receivable is discussed in Note 4.

Revenue recognition

Revenues recognized include product sales and billings for costs and fees for government contracts.

Product Sales

The Company recognizes revenue in accordance with ASC Topic 606, *Revenue From Contracts with Customers* ("Topic 606") which was adopted on January 1, 2018. The Company recognizes revenue when performance obligations under a purchase order or signed quotation are satisfied. The Company's business practice commits the Company to manufacture and deliver product upon acceptance of a customer's purchase order or signed quotation ("agreement"). The agreement with the customer includes specifications of the product to be delivered, price, expected ship date and payment terms. The Company's agreements generally do not contain variable, financing, rights of return or non-cash components. There are no up-front costs to develop the production process. The performance obligation is satisfied at the point in time (single performance obligation) when the product is manufactured to the customer's specification, as performance does not create an asset with an alternative use to the Company. Accordingly, the Company recognizes revenue when the product is shipped, and control of the product, title and risk of loss have been transferred to the customer. The Company grants credit terms considering normal collection risk. If there is doubt about collection, full prepayment for the order is required. Any payments received prior to shipment are recorded as deferred revenue and included in Advance Payments in the Consolidated Balance Sheets.

The Company does not provide maintenance or other services and we do not have sales that involve multiple elements or deliverables.

All of the Company's revenue is denominated in U.S. dollars.

Shipping and handling costs

The Company records costs incurred in connection with shipping and handling of products as cost of goods sold. Amounts billed to customers in connection with these costs are included in revenue and are not material for any of the periods presented in the accompanying financial statements.

Sales tax

The Company collects and remits sales taxes on products sold to customers and reports such amounts under the net method in its Consolidated Statements of Operations and records a liability until remitted to the respective tax authority.

Stock-based compensation

The Company requires all share-based payments to employees, including grants of employee stock options, to be measured at fair value and expensed in the Consolidated Statements of Operations over the service period (generally the vesting period) of the grant. Expense is recognized in the Consolidated Statements of Operations for these share-based payments. The Company uses Black Scholes option pricing model in order to determine the fair value of stock option grants.

Accounting for uncertainty in income taxes

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. The Company recognizes interest and/or penalties related to income tax matters in income tax expense. There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the years ended December 31, 2020 and 2019.

The Company is subject to taxation in the U.S., Malaysia and in a U.S. state jurisdiction. Due to the existence of NOL carryforwards, tax years ended December 31, 2001 through 2006, 2008, 2009 and 2012 through 2019 are open to examination by tax authorities for Federal purposes. Due to NOL carryforwards at the State level, tax years ended 2008, 2009 and 2012 through 2019 are open to examination by state tax authorities. Tax years 2013 through 2019 are open to examination by the Malaysia Inland Revenue Board.

Income taxes

Deferred tax assets and liabilities are provided for temporary differences between financial reporting and income tax bases of assets and liabilities, and are measured using the enacted tax rates and laws expected to be in effect when the differences will reverse. Deferred income taxes also arise from the future benefits of NOL carryforwards. Valuation allowances are established when necessary to reduce deferred tax assets to the amounts expected to be realized. Full valuation allowances on net deferred tax assets are maintained until an appropriate level of profitability that generates taxable income is deemed sustainable or until a tax strategy is developed that would enable the Company to conclude that it is more likely than not that a portion of the deferred tax assets will be realizable. Based on an evaluation in accordance with the accounting standards, as of December 31, 2020 and 2019, a valuation allowance has been recorded against the net U.S. and Malaysia deferred tax assets in order to measure only the portion of the deferred tax assets that are more likely than not to be realized based on the weight of all the available evidence.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Other comprehensive loss

Comprehensive loss is defined as the change in equity of a business enterprise from transactions and other events from non-owner sources. Comprehensive loss includes net loss and other non-owner changes in equity that bypass the statement of operations and are reported in a separate component of equity.

Net income (loss) per common share

Basic net income (loss) per common share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per common share is computed by dividing net income (loss) by the weighted-average number of diluted common shares outstanding during the period. Diluted shares outstanding are calculated by adding to the weighted-average shares (a) any outstanding stock options based on the treasury stock method and (b) restricted stock units ("RSU").

F-14

Diluted net income per share was the same as basic net income per share for the year ended December 31, 2020, because the effects of potentially dilutive securities did not have a material impact on the calculation of diluted net income per share. The Company had outstanding options exercisable into 18,250 shares of the Company's common stock that would have had an anti-dilutive effect at December 31, 2020.

Diluted net loss per common share was the same as basic net loss per common share for the year ended December 31, 2020, because the effects of potentially dilutive securities were anti-dilutive.

New accounting pronouncements adopted

The Company has evaluated other recently issued accounting pronouncements and does not believe that any of these pronouncements will have a significant impact the Company's consolidated financial statements and related disclosures.

2. SEGMENT INFORMATION

The Company has determined that it operates in two segments, the sapphire and pharmacy business.

Revenue is attributed by geographic region based on ship-to location of the Company's customers. The following table summarizes revenue by geographic region:

	Year ended December 31,	
	2020	2019
	(in thousands)	
North America	\$ 4,039	\$ 3,324
Asia	406	185
Other	22	17
Total revenue	<u>\$ 4,467</u>	<u>\$ 3,526</u>

The following table summarizes sales by product type:

	Year ended December 31,	
	2020	2019
	(in thousands)	
Optical	\$ 3,611	\$ 3,338
Core	6	9
Rubicon DTP	850	179
Total revenue	<u>\$ 4,467</u>	<u>\$ 3,526</u>

The following table summarizes assets by geographic region:

	As of December 31,	
	2020	2019
	(in thousands)	
United States	\$ 31,240	\$ 29,703
Malaysia	—	5,094
Other	—	4
Total assets	<u>\$ 31,240</u>	<u>\$ 34,801</u>

The total assets of Rubicon DTP were not material to the total assets of the Company as stated on the consolidated balance sheets, as of December 31, 2020 and 2019.

Rubicon DTP accounted for approximately \$340,000 and \$447,000 of the Company's loss for the year ended December 31, 2020 and 2019, respectively.

F-15

3. INVESTMENTS

The Company invests available cash primarily in U.S. Treasury securities, investment grade commercial paper, FDIC guaranteed certificates of deposit, common stock, equity related securities and corporate notes. Investments classified as available-for-sale debt securities are carried at fair value with unrealized gains and losses recorded in accumulated other comprehensive income/(loss). Investments in equity securities are reported at fair value, with both realized and unrealized gains and losses recorded as unrealized gain/(loss) on investments and realized gain on investments, in other income/(expense), in the Consolidated Statements of Operations. Investments in which the Company has the ability and intent, if necessary, to liquidate are classified as short-term.

The following table presents the amortized cost, and gross unrealized gains and losses on all securities at December 31, 2020:

	<u>Amortized cost</u>	<u>Gross unrealized gains</u>	<u>Gross unrealized losses</u>	<u>Fair value</u>
	(in thousands)			
Short-term investments:				
U.S. Treasury securities	\$ 14,748	\$ —	\$ —	\$ 14,748
Marketable securities	—	—	—	—
Total short-term investments	<u>\$ 14,748</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 14,748</u>

The following table presents the amortized cost, and gross unrealized gains and losses on all securities at December 31, 2019:

	<u>Amortized cost</u>	<u>Gross unrealized gains</u>	<u>Gross unrealized losses</u>	<u>Fair value</u>
	(in thousands)			
Short-term investments:				
U.S. Treasury securities	\$ 14,668	\$ —	\$ —	\$ 14,668
Marketable securities	961	—	(171)	790
Total short-term investments	<u>\$ 15,629</u>	<u>\$ —</u>	<u>\$ (171)</u>	<u>\$ 15,458</u>

The Company values its investments at fair value, defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's fixed income available-for-sale securities consist of U.S. Treasury securities, high-quality investment grade commercial paper, FDIC guaranteed certificates of deposit, common stock, equity related securities and corporate notes. The Company values these securities based on pricing from pricing vendors, who may use quoted prices in active markets for identical assets (Level 1 inputs) or inputs other than quoted prices that are observable either directly or indirectly (Level 2 inputs) in determining fair value. The valuation techniques used to measure the fair value of the Company's financial instruments having Level 2 inputs were derived from non-binding market consensus prices that are corroborated by observable market data, quoted market prices for similar instruments, or pricing models, such as discounted cash flow techniques.

F-16

The following table summarizes the Company's financial assets measured at fair value on a recurring basis as of December 31, 2020:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
	(in thousands)			
Cash equivalents:				
Money market funds	\$ 3,136	\$ —	\$ —	\$ 3,136
Investments:				
Available-for-sales securities—current:				
U.S. Treasury securities	—	14,748	—	14,748
Total	<u>\$ 3,136</u>	<u>\$ 14,748</u>	<u>\$ —</u>	<u>\$ 17,884</u>

The following table summarizes the Company's financial assets measured at fair value on a recurring basis as of December 31, 2019:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
	(in thousands)			
Cash equivalents:				
Money market funds	\$ 3,759	\$ —	\$ —	\$ 3,759
Investments:				
Available-for-sales securities—current:				
U.S. Treasury securities	—	14,668	—	14,668
	790	—	—	790
Total	<u>\$ 4,549</u>	<u>\$ 14,668</u>	<u>\$ —</u>	<u>\$ 19,217</u>

There are no terms or conditions restricting the Company from redeeming any of its investments.

In addition to the debt securities noted above, the Company had approximately \$8.0 million and \$4.9 million of time deposits included in cash and cash equivalents as of December 31, 2020 and 2019, respectively.

4. SIGNIFICANT CUSTOMERS

For the year ended December 31, 2020, the Company had four customers that accounted for approximately 21%, 13%, 11% and 10% of its revenue. For the year ended December 31, 2019, the Company had three customers that accounted for approximately 31%, 15% and 12% of its revenue.

Customers individually representing more than 10% of trade receivables accounted for approximately 44% and 77% of accounts receivable as of December 31, 2020 and 2019, respectively.

5. ASSETS HELD FOR SALE AND LONG-LIVED ASSETS

When circumstances, such as adverse market conditions, indicate that the carrying value of a long-lived asset may be impaired, the Company performs an analysis to review the recoverability of the asset's carrying value using estimates of the undiscounted cash flows (excluding interest charges) from the expected future operations of the asset. These estimates consider factors such as expected future operating income, operating trends and prospects, as well as the effects of demand, competition and other factors. If the analysis indicates that the carrying value is not recoverable from future cash flows, an impairment loss is recognized to the extent that the carrying value exceeds the estimated fair value. The estimated fair value of assets is determined using appraisal techniques which assume the highest and best use of the asset by market participants, considering the use of the asset that is physically possible, legally permissible, and financially feasible at the measurement date. Any impairment losses are recorded as operating expenses, which reduce net income.

In connection with the Company's decision in 2016 to limit its focus to the optical and industrial sapphire markets and exit the LED market, the Company developed a plan to close its Malaysia facility, scale down and consolidate remaining operations in the U.S. and sell additional assets that would not be needed. The Company evaluated its U.S. and Malaysia asset portfolios to identify assets needed for its current business strategy and excess assets that were no longer needed. The Company determined it had excess machinery, equipment and facilities. Excess U.S. and Malaysia assets were evaluated based on assuming an orderly liquidation plan, which considers economic obsolescence and sales of comparable equipment, as it is the Company's intention to sell these assets. Additionally, the Company evaluated its U.S. assets continuing to be used in operations using a cost and market approach to determine the current fair value.

In the year ended December 31, 2019, we completed the sale of the remaining excess equipment located in Malaysia for total consideration of \$490,000. Such equipment had a total net book value of \$188,000, thereby resulting in a gain on disposal of \$302,000.

The Company entered into an agreement for the sale of its Malaysian facility in December 2019, which was completed in June 2020.

In June 2020, the Company completed the sale of its Malaysian facility for a net sale price of approximately \$4.8 million (based on the exchange rate on June 30, 2020 of \$1=MYR4.27) after the payment of consent fees, real estate taxes, brokerage and legal fees, transfer and other expenses. The Company recorded a gain on the disposal of the Malaysian facility of approximately \$1.8 million.

In December, 2020, the Company completed the sale of all of the outstanding shares of capital stock (the "Capital Shares") of its wholly owned subsidiary Rubicon Sapphire Technology (Malaysia) SDN. BHD. The company recorded a gain on the sale of \$261,000. The Company is continuing to pursue the sale of our vacant parcel of land in Batavia, Illinois. Although the timing on the sale or lease of this real estate is difficult to predict, this property was classified as current assets held for sale at December 31, 2020 and 2019, as it is the Company's intention to complete the sale of the Batavia Illinois property within the next twelve-month period.

6. STOCKHOLDERS' EQUITY

Common stock

At the Company's annual meeting of stockholders held on May 3, 2017, the Company's stockholders approved amendments to the Company's Eighth Amended and Restated Certificate of Incorporation (as amended, the "Certificate of Incorporation") to (i) effect a reverse stock split of the Company's common stock; and (ii) decrease the Company's authorized number of shares of common stock to three times the number of shares of the Company's common stock outstanding immediately following the reverse stock split. On May 3, 2017, following the annual meeting, the Company filed with the Secretary of State of the State of Delaware a Certificate of Amendment to (a) implement the reverse stock split at a ratio of 1-for-10; and (b) to reduce the number of authorized shares of common stock from 40,000,000 to 8,200,000, consequently reducing the number of total authorized shares from 45,000,000 to 13,200,000. With the completion of the reverse stock split, the Company's shares began trading above the required \$1.00 per share closing bid price, as required by the Listing Qualifications Department of NASDAQ. The share information has been retroactively reflected for the effects of this reverse stock split for all periods presented.

Preferred stock

At the Company's annual meeting of stockholders held on May 10, 2018, the Company's stockholders approved an amendment to the Certificate of Incorporation to decrease the Company's authorized number of shares of preferred stock from 5,000,000 shares to 1,000,000 shares. The Company filed with the Secretary of State of the State of Delaware a Certificate of Amendment to decrease the authorized number of preferred shares, consequently reducing the number of total authorized shares from 13,200,000 to 9,200,000.

Common shares reserved

As of December 31, 2020, the Company had reserved 65,103 shares of common stock for issuance upon the exercise of outstanding common stock options and vesting of RSUs. Also 301,105 shares of the Company's common stock were reserved for future grants of stock options and RSUs (or other similar equity instruments) under the Rubicon Technology, Inc. 2016 Stock Incentive Plan (the "2016 Plan") as of December 31, 2020.

7. STOCKHOLDER RIGHTS AGREEMENT

On December 18, 2017, the Company entered into a Section 382 Rights Agreement with American Stock Transfer & Trust Company, LLC, as Rights Agent (the "Rights Agreement") in an effort to protect stockholder value by attempting to diminish the risk that the Company's ability to use its net NOLs to reduce potential future federal income tax obligations may become substantially limited. The Company's ability to utilize its NOLs may be substantially limited if the Company experiences an "ownership change" within the meaning of Section 382 of the Internal Revenue Code of 1986, as amended (the "IRC"). The Rights Agreement is intended to act as a deterrent to any person acquiring beneficial ownership of 4.9% or more of the Company's outstanding common stock without the approval of the Company's Board of Directors (the "Board").

The Board authorized the issuance of one Right for each outstanding share of common stock, par value \$0.001 per share, of the Company, payable to stockholders of record date of the close of business on January 2, 2018. One Right will also be issued together with each share of the Company's common stock issued after January 2, 2018 but before the Distribution Date (as defined below) and, in certain circumstances, after the Distribution Date. Subject to the terms, provisions and conditions of the Rights Agreement, if the Rights become exercisable, each Right would initially represent the right to purchase from the Company one one-thousandth of a share of Series A Junior Participating Preferred Stock, par value \$0.001 per share, of the Company (the "Series A Preferred Stock") for a purchase price of \$40.00. If issued, each one-thousandth of a share of Series A Preferred Stock would give the stockholder approximately the same dividend, voting and liquidation rights as does one share of common stock. However, prior to exercise, a Right does not give its holder any rights as a stockholder of the Company, including, without limitation, any dividend, voting or liquidation rights.

The Rights will not be exercisable until the earlier of (i) ten business days after a public announcement that a person has become an "Acquiring Person" by acquiring beneficial ownership of 4.9% or more of outstanding common stock (or, in the case of a person that had beneficial ownership of 4.9% or more of the outstanding common stock as of the close of business on December 18, 2017, by obtaining beneficial ownership of any additional shares of common stock representing 0.5% or more of the shares of common stock then outstanding (other than pursuant to a dividend or distribution paid or made by the Company on the outstanding shares of the common stock or pursuant to a split or subdivision of the outstanding shares of common stock) at a time such person still beneficially owns 4.9% or more of the outstanding common stock), and (ii) ten business days (or such later date as may be specified by the Board prior to such time as any person becomes an Acquiring Person) after the commencement of a tender or exchange offer by or on behalf of a person that, if completed, would result in such

person becoming an Acquiring Person (the “Distribution Date”).

Until the Distribution Date, common stock certificates or the ownership statements issued with respect to uncertificated shares of common stock will evidence the Rights. Any transfer of shares of common stock prior to the Distribution Date will also constitute a transfer of the associated Rights. After the Distribution Date, separate rights certificates will be issued and the Rights may be transferred other than in connection with the transfer of the underlying shares of common stock unless and until the Board has determined to effect an exchange pursuant to the Rights Agreement (as described below).

In the event that a person becomes an Acquiring Person, each holder of a Right, other than Rights that are or, under certain circumstances, were beneficially owned by the Acquiring Person (which will thereupon become void), will thereafter have the right to receive upon exercise of a Right and payment of the purchase price, a number of shares of the Company’s common stock (or, in certain circumstances, cash, property or other securities of the Company) having a market value equal to two times the purchase price. However, Rights are subject to redemption and exchange at the option of the Company.

In the event that, at any time following a person becoming an Acquiring Person, (i) the Company engages in a merger or other business combination transaction in which the Company is not the surviving corporation; (ii) the Company engages in a merger or other business combination transaction in which the Company is the surviving corporation and the common stock is changed or exchanged; or (iii) 50% or more of the Company’s assets, cash flow or earning power is sold or transferred, each holder of a Right (except Rights which have previously been voided) shall thereafter have the right to receive, upon exercise of the Right, common stock of the acquiring company having a value equal to two times the purchase price.

F-19

At any time until the earlier of December 18, 2023, and ten calendar days following the first date of public announcement that a person has become an Acquiring Person or that discloses information which reveals the existence of an Acquiring Person or such earlier date as a majority of the Board becomes aware of the existence of an Acquiring Person, the Board may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right (the “Redemption Price”). The redemption of the Rights may be made effective at such time, on such basis and with such conditions as the Board in its sole discretion may establish. Immediately upon any redemption of the Rights, the right to exercise the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

At any time after a person becomes an Acquiring Person, the Board may, at its option, exchange the Rights (other than Rights that have become void), in whole or in part, at an exchange ratio of one share of common stock, or a fractional share of Series A Preferred Stock (or of a share of a similar class or series of the Company’s preferred stock having similar rights, preferences and privileges) of equivalent value, per Right (subject to adjustment). Immediately upon an exchange of any Rights, the right to exercise such Rights will terminate and the only right of the holders of Rights will be to receive the number of shares of common stock (or fractional share of Series A Preferred Stock or of a share of a similar class or series of the Company’s preferred stock having similar rights, preferences and privileges) equal to the number of such Rights held by such holder multiplied by the exchange ratio.

Each one one-thousandth of a share of Series A Preferred Stock, if issued: (i) will be nonredeemable and junior to any other series of preferred stock the Company may issue (unless otherwise provided in the terms of such other series), (ii) will entitle holders to preferential cumulative quarterly dividends in an amount per share of Series A Preferred Stock equal to the greater of (a) \$1 or (b) 1,000 times the aggregate the dividends, if any, declared on one share of the Company’s common stock, (iii) will entitle holders upon liquidation (voluntary or otherwise) to receive \$1,000 per share of Series A Preferred Stock plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, (iv) will have the same voting power as one share of common stock, and (v) will entitle holders to a per share payment equal to the payment made on one share of the Company’s common stock, if shares of the common stock are exchanged via merger, consolidation, or a similar transaction. Because of the nature of the Series A Preferred Stock’s dividend, liquidation and voting rights, the value of a Unit of Series A Preferred Stock purchasable upon exercise of each Right should approximate the value of one share of common stock.

The Rights and the Rights Agreement will expire on the earliest of (i) December 18, 2023, (ii) the time at which the Rights are redeemed pursuant to the Rights Agreement, (iii) the time at which the Rights are exchanged in full pursuant to the Rights Agreement, (iv) the date that the Board determines that the Rights Agreement is no longer necessary for the preservation of material valuable Tax Benefits, (v) the beginning of a taxable year of the Company to which the Board determines that no NOL tax benefits may be carried forward, and (vi) a determination by the Board, prior to the time any Person becomes an Acquiring Person, that the Rights Agreement and the Rights are no longer in the best interests of the Company and its stockholders.

The Board may adjust the purchase price, the number of shares of Series A Preferred Stock or other securities or assets issuable and the number of outstanding Rights to prevent dilution that may occur as a result of certain events, including among others, a stock dividend, a stock split or a reclassification of the Series A Preferred Stock or common stock. With certain exceptions, no adjustments to the purchase price will be required until cumulative adjustments amount to at least 1% of the purchase price.

For so long as the Rights are redeemable, the Board may supplement or amend any provision of the Rights Agreement in any respect without the approval of the holders of the Rights. From and after the time the Rights are no longer redeemable, the Board may supplement or amend the Rights Agreement only to cure an ambiguity, to alter time period provisions, to correct inconsistent provisions, or to make any additional changes to the Rights Agreement which the Company may deem necessary or desirable, but only to the extent that those changes do not impair or adversely affect any Rights holder (other than an Acquiring Person or any Affiliate or Associate of an Acquiring Person or certain of their transferees) and do not result in the Rights again becoming redeemable or the Rights Agreement again becoming amendable other than in accordance with this sentence.

In connection with the adoption of the Rights Agreement and authorization and declaration of the dividend of the Rights, on December 18, 2017, the Company filed the Certificate of Designation with the Secretary of State of the State of Delaware. The Certificate of Designation became effective on December 18, 2017.

F-20

8. STOCK INCENTIVE PLANS

In August 2007, the Company adopted the Rubicon Technology Inc. 2007 Stock Incentive Plan, which was amended and restated effective in March 2011 (the “2007 Plan”), and which allowed for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock, RSUs, performance awards and bonus shares. The maximum number of shares that could be awarded under the 2007 Plan was 440,769 shares. Options granted under the 2007 Plan entitle the holder to purchase shares of the Company’s common stock at the specified option exercise price, which could not be less than the fair market value of the common stock on the grant date. On June 24, 2016, the 2007 Plan terminated with the adoption of the Rubicon Technology, Inc. 2016 Stock Incentive Plan, (the “2016 Plan”). Any existing awards under the 2007 Plan remain outstanding in accordance with their current terms under the 2007 Plan. In June 2016, the Company’s stockholders approved adoption of the 2016 Plan effective as of March 17, 2016, which allows for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock, RSUs, performance awards and bonus shares. The Compensation Committee of the Board administers the 2016 Plan. The committee determines the type of award to be granted, the fair value, the number of shares covered by the award, and the time when the award vests and may be exercised.

Pursuant to the 2016 Plan, 222,980 shares of the Company’s common stock plus any shares subject to outstanding awards under the 2007 Plan that subsequently expire unexercised, are forfeited without the delivery of shares or are settled in cash, will be available for issuance under the 2016 Plan. The 2016 Plan will automatically terminate on March 17, 2026, unless the Company terminates it sooner.

The following table summarizes the activity of the stock incentive and equity plans:

Shares available	Number of	Weighted-average	Number of restricted	Number of
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	for grant	options outstanding	option exercise price	stock shares issued	RSUs outstanding
Outstanding at January 1, 2019	295,067	69,083	12.10	99,570	50,176
Granted	(60,925)	1,000	—	—	9,925
Exercised/issued	—	(5,000)	—	—	(6,098)
Canceled/forfeited	42,244	(42,244)	11.35	—	—
Outstanding at December 31, 2019	276,386	22,839	13.48	99,570	54,003
Granted	(20,877)	—	—	—	3,597
Exercised/issued	—	(2,250)	—	—	(3,597)
Canceled/forfeited	40,596	(489)	202.56	—	(9,000)
Outstanding at December 31, 2020	296,105	20,100	\$ 9.71	99,570	45,003

There were no option grants made during 2020.

At December 31, 2020, the exercise prices of outstanding options were as follows:

Exercise price	Number of options outstanding	Average remaining contractual life (years)	Number of options exercisable
\$6.10 - \$8.34	18,250	5.75	18,250
\$44.10	1,850	3.94	1,850
	20,100	4.73	20,100

F-21

The aggregate grant date fair value of the options that became vested in the years ended 2020 and 2019 was \$30,000 and \$77,000, respectively.

The following table summarizes the activity of non-vested options:

	Non-vested options	Weighted- average option exercise price
Non-vested at January 1, 2019	21,992	\$ 6.86
Granted	1,000	8.34
Vested	(10,878)	7.07
Cancelled	(7,248)	7.25
Non-vested at December 31, 2019	4,866	6.10
Granted	—	—
Vested	(4,866)	6.10
Cancelled	—	—
Non-vested at December 31, 2020	—	\$ —

The Company's aggregate intrinsic value is calculated as the difference between the exercise price of the underlying stock options and the fair value of the Company's common stock. Based on the fair value of the common stock at December 31, 2020 there was \$52,000 of intrinsic value arising from 18,250 stock options exercisable or outstanding.

The Company used historical stock prices as the basis for its volatility assumptions. The assumed risk-free rates were based on U.S. Treasury rates in effect at the time of grant with a term consistent with the expected option lives. The expected term for the year ended December 31, 2020, is based upon the Company's median average life of its options. The forfeiture rate is based on the past history of forfeited options. The expense is being allocated using the straight-line method. For the years ended December 31, 2020 and 2019, the Company recorded \$14,000 and \$24,000, respectively, of stock option compensation expense. As of December 31, 2020, all outstanding options awarded have been fully vested.

For the year ended December 31, 2020, there were no options granted.

The following table summarizes the award vesting terms for the RSUs granted in 2019:

Number of RSUs	Target price
925	\$ 7.95

The following table summarizes the award vesting terms for the RSUs granted in 2018:

Number of restricted stock units	Target price
902	\$ 11.00
15,000	\$ 12.50
15,000	\$ 14.00

F-22

The RSUs vest in the amounts set forth below on the first date the 15-trading day average closing price of the Company's common stock equals or exceeds the corresponding target price for the common stock before May 12, 2021. At the time the negotiation of the terms of the employment agreement began, the closing price of the common stock was \$5.50. On the date of grant, the closing price of the common stock was \$6.30. During the twelve months ended December 31, 2017, the first three tranches of the grant vested. No additional tranches vested during the years ended December 31, 2020, 2019 and 2018.

The Company used Monte Carlo simulation model valuation technique to determine the fair value of RSUs granted because the awards vest based upon achievement of market price targets. The Monte Carlo simulation model utilizes multiple input variables that determine the probability of satisfying the market condition stipulated in the award and calculates the fair value of each RSU. The Company used the following assumptions in determining the fair value of the RSUs:

Granted	
January 2018	March 2017

Daily expected stock price volatility	4.2806%	4.4237%
Daily expected mean return on equity	(0.2575)%	(0.2226)%
Daily expected dividend yield	0.0%	0.0%
Average daily risk-free interest rate	0.0078%	0.0063%

The daily expected stock price volatility is based on a four-year historical volatility of the Company's common stock. The daily expected dividend yield is based on annual expected dividend payments. The average daily risk-free interest rate is based on the three-year treasury yield as of the grant date. Each of the tranches is calculated to have its own fair value and requisite service period. The fair value of each tranche is amortized over the requisite or derived service period which is up to four years. The RSUs granted in January 2018 and March 2017 had a grant date fair value of \$209,000 and \$323,000, respectively. There were no grants with market price targets issued in the years ended December 31, 2020 and 2019.

A summary of the Company's RSUs is as follows:

	RSUs outstanding	Weighted- average price at time of grant	Aggregate intrinsic value
Non-vested RSUs as of January 1, 2019	50,176	\$ 6.31	
Granted	9,925	8.32	
Vested	(6,098)	7.40	
Cancelled	—	—	
Non-vested RSUs as of December 31, 2019	54,003	6.56	
Granted	3,597	8.34	
Vested	(3,597)	8.34	
Cancelled	(9,000)	8.36	
Non-vested RSUs at December 31, 2020	45,003	\$ 6.20	\$ 278,961

The fair value of each RSU is the market price on the date of grant and is being recorded as compensation expense ratably over the vesting terms or the expected achievement of market price targets based on the Monte Carlo simulation model. For the years ended December 31, 2020 and 2019, the Company recorded \$38,000 and \$7,000 of RSU expense, respectively. The RSUs are forfeited by a participant upon termination for any reason, and there is no proportionate or partial vesting in the periods between the vesting dates. As of December 31, 2020, there was no unrecognized compensation cost related to the non-vested RSUs.

For the year ended December 31, 2020 the Company recorded no compensation related to restricted stock compared to \$14,000 in the prior year.

During the year ended December 31, 2020 the Company awarded approximately 17,000 shares to an officer of the Company with a fair value of \$146,000.

F-23

9. INCOME TAXES

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the "Act") which, among other provisions, reduced the U.S. corporate tax rate from 35% to 21% effective January 1, 2018. The SEC issued guidance, Staff Accounting Bulletin 118, on accounting for the tax effects of the Act. The guidance allowed the Company to record provisional amounts for those impacts, with the requirement that the accounting be completed in a period not to exceed one year from the date of enactment. The Company has completed its accounting for the tax effects of enactment of the Act. The deemed inclusion from the repatriation tax increased from \$3.9 million at the time of provision to \$5.0 million at the time the calculation was finalized for the tax return. The increase of the inclusion related primarily to the refinement of Malaysia earnings and profits. As the Company is in a full valuation allowance position, an equal benefit adjustment was recorded for the impact of the increase of the deemed repatriation tax.

Components of income before income taxes and the income tax provision are as follows:

Income (loss) before income taxes

	Year ended December 31,	
	2020	2019
	(in thousands)	
U.S.	\$ (3,060)	\$ (1,142)
Foreign	2,018	17
Total	\$ (1,050)	\$ (1,125)

Income taxes

	Year ended December 31,	
	2020	2019
	(in thousands)	
<i>Current</i>		
U.S.	\$ —	\$ —
State	—	—
Foreign	13	22
Total current income tax expense	13	22
<i>Deferred</i>		
U.S.	—	—
State	—	—
Foreign	—	—
Total deferred income tax expense (benefit)	—	—
Total income tax expense (benefit)	\$ 13	\$ 22

The reconciliation of income tax computed at the federal statutory rate to income before taxes is as follows:

Year ended
December 31,

	2020	2019
U.S. federal statutory rate	(21.0)%	(21.0)%
State taxes net of federal benefit	(18.2)	(7.6)
Foreign rate differential and transactional tax	5.9	0.1
Tax credits	—	—
Valuation allowance	33.3	28.5
Other	1	2.0
	<u>1.0%</u>	<u>2.0%</u>

F-24

Deferred income taxes reflect the net tax effects of the temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's net deferred income taxes are as follows at December 31:

	2020	2019
	(in thousands)	
Deferred tax assets:		
Allowance for doubtful accounts	\$ 1	\$ 11
Inventory reserves	3,096	3,185
Consumables excess reserve	167	169
Accrued liabilities	81	52
Warrant interest expense	195	196
Stock compensation expense	789	789
State net operating loss	14,476	15,010
Net operating loss carryforward	41,105	40,437
Tax credits	710	740
Depreciation	1,000	1,329
Valuation allowance	(61,556)	(61,869)
Total deferred tax assets	<u>64</u>	<u>49</u>
Deferred tax liability:		
Prepaid expenses	(64)	(49)
Net deferred tax liability	<u>\$ —</u>	<u>\$ —</u>

In February 2018, the FASB issued ASU No. 2018-02 ("ASU 2018-02"), *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Comprehensive Income*. The new guidance allows companies to reclassify stranded tax effects resulting from the Tax Act, from accumulated other comprehensive income to retained earnings. The guidance also requires certain new disclosures regardless of the election. Early adoption is permitted. The Company's adoption of ASU 2018-02 did not have a material impact on its consolidated financial statements.

The Company adopted the guidance in ASU No. 2015-17, *Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes*, which requires that all deferred tax assets and liabilities, along with any related valuation allowance, be classified as noncurrent in the balance sheet. As a result, each jurisdiction has one net noncurrent deferred tax asset or liability. The new guidance does not change the existing requirement that only permits offsetting within a jurisdiction. Companies are still prohibited from offsetting deferred tax liabilities from one jurisdiction against deferred tax assets of another jurisdiction. The change in accounting principle did not have an impact on the Company's results of operations, cash flows or stockholders' equity.

At December 31, 2020, we had separate Federal, Illinois and Indiana NOL carryforwards of \$191.3 million, \$196.0 million and \$322,000, respectively. The Federal and Illinois NOLs began to expire in 2021 and the Indiana NOL will begin to expire in 2039. With the adoption of ASU 2016-09 in 2017, we recorded a deferred tax asset related to \$26.4 million of unrecorded Federal and State NOLs attributable to stock option exercises. NOLs attributable to the stock option exercise were fully offset by the valuation allowance (as described above). We have recorded an uncertain tax position of \$2.6 million that further reduces the net operating loss deferred tax assets reported in the financial statements. In addition, at December 31, 2020, we had Federal and Illinois research and development credits and Illinois investment tax credit of \$662,000, \$51,000 and \$370, respectively. The Illinois credits expire in 2021.

The Company completed an analysis of the utilization of NOLs subject to limits based upon certain ownership changes as of December 31, 2020. The results of this analysis indicated no ownership change limiting the utilization of net operating losses and tax credits.

F-25

The Company prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken, or expected to be taken, in a tax return. At December 31, 2020 and 2019, the Company had \$1.1 million of unrecognized tax benefits taken or expected to be taken in a tax return that have been recorded on the Company's financial statements as an offset to the valuation allowance related to tax positions taken in 2012. It is not reasonably possible that the amount will change in the next twelve months. There were no material changes to prior year or current year positions taken during the year ended December 31, 2020.

There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the years ended December 31, 2020 and 2019.

The Company files income tax returns in the United States federal jurisdiction and in a state jurisdiction. During 2009, the Company began foreign operations in Malaysia and is subject to local income taxes in that jurisdiction. The Company's Malaysia tax returns for the periods ended December 31, 2010 through 2012 have been audited by the Malaysia Inland Revenue Board with no changes made to the taxable income for those years. All other tax years in Malaysia are open to examination by tax authorities.

The Company's federal tax returns for the periods ended December 31, 2010, 2008 and 2007 have been audited by the Internal Revenue Service (IRS) with no changes made to the Company's taxable losses for those years. The Company's state tax returns for the periods ended December 31, 2009 through 2012 have been audited by the Illinois Department of Revenue with no changes made to the Company's taxable losses for those years. Due to the existence of NOL carryforwards, tax years ended December 31, 2001 through 2006, 2008, 2009 and 2011 through 2019 are open to examination by tax authorities for Federal purposes. Due to NOL carryforwards at the State level, tax years ended 2008, 2009 and 2012 through 2019 are open to examination by state tax authorities. Tax years 2013 through 2019 are open to examination by the Malaysia Inland Revenue Board.

Due to the closing of the Rubicon Malaysia operations, the Company no longer considers the undistributed earnings of Rubicon Malaysia to be indefinitely reinvested. Upon liquidation of Rubicon Malaysia, it is anticipated any cash left after the liquidation will be brought back to the U.S. via a payment of principal towards the intercompany loan. A withholding tax may be payable to the Malaysian government on the interest portion of the loan. At December 31, 2020 and 2019, the Company accrued the withholding tax on the interest balance of the loan in the amount of \$13,000 and \$22,000, respectively, which represents the incremental tax.

COVID-19 Pandemic

In March 2020, the World Health Organization declared the outbreak of a novel coronavirus (COVID-19) as a pandemic. The full impact of the COVID-19 outbreak is unknown and cannot be reasonably estimated. The magnitude and duration of the COVID-19 outbreak, as well as other factors, could result in a material impact to the Company's financial statements in future reporting periods.

Operating Leases

The Company adopted ASU 2016-02 in the first quarter of the fiscal year ending December 31, 2019. The adoption of ASU 2016-02 did not have a material impact on the Company's consolidated financial statements, as the Company does not have any material lease agreements. Rubicon DTP leases a building for its manufacturing and offices, however such lease was not considered material to the Company's financial statements.

Direct Dose's net rent expense under operating leases in 2020 and 2019 amounted to \$34,200 and \$25,900, respectively. As of December 31, 2020, Direct Dose's operating lease for its facility was month-to-month. On January 6, 2021, Direct Dose entered into a one year lease for an aggregate commitment of approximately \$35,500.

Litigation

From time to time, the Company experiences routine litigation in the ordinary course of its business.

There are no outstanding material matters as of December 31, 2020 and through the date of this filing.

11. BENEFIT PLAN

The Company sponsors a 401(k) savings plan (the "Plan"). Employees are eligible to participate in the Plan upon reaching 18 years of age. Employees make contributions to the Plan through payroll deferrals. Employer matching contributions are discretionary. There were no employer matching contributions for the years ended December 31, 2020 and 2019.

12. SUBSEQUENT EVENTS

None.

F-26

EX-21.1 2 f10k2020ex21-1_rubicon.htm SUBSIDIARIES OF THE COMPANY

Exhibit 21.1

**Rubicon Technologies, Inc.
Subsidiaries of the Company**

Name of subsidiary	State (or other jurisdiction of incorporation)
Rubicon Technology Worldwide LLC	Illinois
Rubicon Technology BP LLC	Delaware
Rubicon DTP LLC	Delaware

EX-23.1 3 f10k2020ex23-1_rubicon.htm CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Exhibit 23.1

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statements of Rubicon Technology, Inc. on Form S-3 (File No. 333-167272), as amended (File No. 333-192536) and on Forms S-8 (File No. 333-147552, File No. 333-180211 and File No. 333-213025) of our report dated March 22, 2021 with respect to our audits of the consolidated financial statements of Rubicon Technology, Inc. and Subsidiaries as of December 31, 2020 and 2019 and for each of the two years in the period ended December 31, 2020, which report is included in this Annual Report on Form 10-K of Rubicon Technology, Inc. and Subsidiaries for the year ended December 31, 2020.

/s/ Marcum LLP
Marcum LLP
Chicago, Illinois
March 22, 2021

EX-31.1 4 f10k2020ex31-1_rubicon.htm CERTIFICATION

Exhibit 31.1

Certifications

Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Timothy E. Brog, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rubicon Technology, Inc. (the "registrant");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly

during the period in which this report is being prepared;

- b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
- a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 22, 2021

By: /s/ Timothy E. Brog
Timothy E. Brog
President and Chief Executive Officer

EX-31.2 5 f10k2020ex31-2_rubicon.htm CERTIFICATION

Exhibit 31.2

Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Kevin T. Lusardi, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rubicon Technology, Inc. (the "registrant");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 22, 2021

By: /s/ Kevin T. Lusardi
Kevin T. Lusardi
Chief Financial Officer

EX-32.1 6 f10k2020ex32-1_rubicon.htm CERTIFICATION

Exhibit 32.1

Certification Pursuant to Section 906 of The Sarbanes-Oxley Act of 2002,
18 U.S.C. Section 1350

In connection with the Annual Report of Rubicon Technology, Inc. (the "Company") on Form 10-K for the year ended December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Timothy E. Brog, President and Chief Executive Officer of the Company, and I, Kevin T. Lusardi, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 22, 2021

By: /s/ Timothy E. Brog
Timothy E. Brog
President and Chief Executive Officer

Date: March 22, 2021

By: /s/ Kevin T. Lusardi
Kevin T. Lusardi
Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to the registrant and will be retained by the registrant and furnished to the Securities and Exchange Commission or its staff upon request.