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# Zacks Small-Cap Research

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## Cryoport Inc (CYRX-NASDAQ)

***CYRX: Q3 Another Very Strong Quarter With New Records in Several Categories. Operating Leverage Continues To Solidify***

We use an average comparable PE/G ratio of 1.8 which is applied to our forecasted revenue growth rate of CYRX of 58% through fiscal 2023 and discounted it back to the present at 11% to come to present value of approximately $17/share.

| | |
|---|---|
| Current Price (11/19/18) | $9.98 |
| **Valuation** | **$17.00** |

## OUTLOOK

The topline was well-ahead of our number, as was total biopharma and reproductive medicine. Total revenue crushed the prior best (Q2: $4.6M) by 14% but that actually may not be the most encouraging sign that CYRX may be able to reach profitability in the not-too-distant future. We point to the fact the commercial support revenue – the anticipated long-term driver of th topline – accounted for just 17% of the $658k of sequential revenue growth as a major highlight in Q3. Illustrating that CYRX's other segments remain the most significant current growth catalysts and that revenue acceleration is still likely tip-of-the-iceberg'ish at this point. As the clinical trial roster and number of phase III trials supported stacks higher every quarter, so does CYRX's commercial pipeline and related revenue opportunities. The other, perhaps less obvious, highlight in our opinion was the continued gains made on operating leverage in Q3. This is despite opening of the two new distribution/logistics facilities. CryoPort has done an extraordinary job in keeping expenses relatively flat in the face of ramping revenue-generating and other operating activities. That restraint could become much more obvious in the coming periods with even moderate topline growth. With the recent infrastructure build out, we could see fairly rapid improvement in operating loss/income in just the next one or two quarters.

## SUMMARY DATA

| | |
|---|---|
| **52-Week High** | **$16.88** |
| **52-Week Low** | **$6.66** |
| **One-Year Return (%)** | **52.18** |
| **Beta** | **1.42** |
| **Average Daily Volume (sh)** | **230,057** |
| **Shares Outstanding (mil)** | **29** |
| **Market Capitalization ($mil)** | **$292** |
| **Short Interest Ratio (days)** | **N/A** |
| **Institutional Ownership (%)** | **47** |
| **Insider Ownership (%)** | **10** |
| **Annual Cash Dividend** | **$0.00** |
| **Dividend Yield (%)** | **0.00** |
| **5-Yr. Historical Growth Rates** | |
| **Sales (%)** | **50.1** |
| **Earnings Per Share (%)** | **N/A** |
| **Dividend (%)** | **N/A** |
| **P/E using TTM EPS** | **N/A** |
| **P/E using 2018 Estimate** | **N/A** |
| **P/E using 2019 Estimate** | **N/A** |
| **Zacks Rank** | **N/A** |

| | |
|---|---|
| **Risk Level** | **Above Avg.,** |
| **Type of Stock** | **Small-Growth** |
| **Industry** | **Shipping** |

## ZACKS ESTIMATES

**Revenue**
(in '000s of $)

| | Q1 (Mar) | Q2 (June) | Q3 (Sep) | Q4 (Dec) | Year (Mar) |
|---|---|---|---|---|---|
| 2017 | 2712 A | 2917 A | 3003 A | 3322 A | 11,954 A |
| 2018 | 4023 A | 4627 A | 5047 E | 5565 E | 19,262 E |
| 2019 | | | | | 32,718 E |
| 2020 | | | | | 49,132 E |

**Earnings per Share**

| | Q1 (June) | Q2 (Sep) | Q3 (Dec) | Q4 (Mar) | Year (Mar) |
|---|---|---|---|---|---|
| 2017 | -$0.10 A | -$0.08 A | -$0.08 A | -$0.09 A | -$0.34 A |
| 2018 | -$0.10 A | -$0.09 A | -$0.08 E | -$0.07 E | -$0.33 E |
| 2019 | | | | | -$0.14 E |
| 2020 | | | | | -$0.03 E |

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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**Q3 2018:** ***Another Very Strong Quarter With New Records in Several Categories. Operating Leverage Continues To Solidify…***

Another very strong quarter for CryoPort with Q3 setting new records in several categories including total revenue, clinical trial revenue, commercial support revenue and reproductive medicine revenue. In addition, the 37 new clinical trials added in the period were a record high and operating expenses as a percentage of revenue were a record low. The only (relatively minor) 'miss' was gross margin – which contracted a bit from Q2 – and even that wasn't really a disappointment as management had guided for some interim GM contraction from opening of the two new distribution facilities (NJ and The Netherlands).

The topline was well-ahead of our number, as was total biopharma and reproductive medicine. Total revenue crushed the prior best (Q2: $4.6M) by 14% but that actually may not be the most encouraging sign that CYRX may be able to reach profitability in the not-too-distant future. We point to the fact the commercial support revenue – the anticipated long-term driver of th topline – accounted for just 17% of the $658k of sequential revenue growth as a major highlight in Q3. Illustrating that CYRX's other segments remain the most significant current growth catalysts and that revenue acceleration is still likely tip-of-the-iceberg'ish at this point. As the clinical trial roster and number of phase III trials supported stacks higher every quarter, so does CYRX's commercial pipeline and related revenue opportunities.

The other, perhaps less obvious, highlight in our opinion was the continued gains made on operating leverage in Q3. This is despite opening of the two new distribution/logistics facilities. CryoPort has done an extraordinary job in keeping expenses relatively flat in the face of ramping revenue-generating and other operating activities. That restraint could become much more obvious in the coming periods with even moderate topline growth. With the recent infrastructure build out, we could see fairly rapid improvement in operating loss/income in just the next one or two quarters.

**Revenue**

Q3 revenue, at $5.3M, was up 76% yoy, up 14% sequentially and about 5% ahead of our $5.1M estimate. It was also a new record and marked the 16th consecutive quarter of qoq revenue growth. Biopharma, which accounted for 85% of total sales, was again the main catalyst and represented approximately 90% of total yoy revenue growth. This was the third quarter in which commercialized support revenue was a meaningful contributor. While commercial support represented just 17% of qoq revenue growth, it represented approximately 24% of growth from Q3'17.

Animal health revenue, which has historically contributed only about 10% of CYRX's top-line, contracted 8% from the prior year and fell 18% from Q2. This segment has had a tendency to be lumpy as much of the revenue is tied to animal clinical studies – fortunately, management expects Animal Health to return to growth as these trials accelerate. We continue to think animal health has more room to grow. Meanwhile, reproductive medicine remained very strong, turning in record high revenue in Q3 which was up 43% yoy and +17% from Q2. CryoStork and new marketing campaigs were credited for the continued domestic strength of this segment but it appears it was international revenue that was the most significant factor. While international reproductive medicine sales had flailed in the recent past, they returned to growth in Q3. Newly-launch CryoStork Insurance (for IVF) could provide another tailwind.

**Q2 results compared to our estimates; biopharma: $4.47M A vs. $4.24M E, Δ = +5%, reproductive medicine: $584k A vs. $504k E, Δ = +16% and animal health: $229k A vs. $299k E, Δ = -23%.**

Relative to biopharma, revenue was $4.5M, an increase of $2.1M (+91%) from Q3 '17 and up $623k (16%) from Q2. Commercialized support revenue, which was $555k in the quarter, compared to $0 in Q3 '17 and $446k in Q2 '18, accounted for roughly 26% of the yoy growth and 18% of the sequential growth of the biopharma segment.

The beat to our biopharma number relates entirely to clinical trial support, with commercialized support revenue coming in about 12% lower than our $632k estimate. For the full year 2018, we now look for commercialized support revenue of $2.15M, revised slightly from $2.22M. CYRX added 37 new trials (vs. our 20 estimate) in Q3, the most added in any quarter. The total they support now sits at 295 – which is up 100 from 195 at the end of Q3 '17. Importantly, the number (and % of total) of phase III trials also continues to grow – from 20 at the end of Q3 '17, to 26 at the end of fiscal 2017 and to 38 as of the end of Q3 '18. Phase III's now account for about 13% (vs. 10% in the prior year) of CYRX's total trial roster, while phase IIs and IIIs, combined, account for 57% (vs. 52% in the prior year). Greater weighting of later stage trials should help buoy (what we call) the clinical trial multiple.

Growth of the clinical trial roster remains the major driver of biopharma (and total revenue) – and, increases the unrealized long-term revenue potential of the commercial pipeline. We expect CYRX will have ample opportunity to continue to add new trials. And the recent opening (official opening was in October) of two new logistics centers (in N.J. and Amsterdam) provides CYRX with greater capacity to bring on even more business. Growth in the clinical trial roster is also indicative of CYRX's capabilities and is almost certainly helping to drive awareness of their unmatched expertise in cryogenic shipping and logistics. And while growth in the clinical trial customer base has been the main driver of CYRX's success to-date, that could soon be eclipsed by contribution related to supporting commercialized products.

Relative to animal health, Q3 revenue was $229k – down 8% yoy, down 18% sequentially and 23% lower than our estimate. We note that the qoq comp was tough as Q2'18 Animal Helath revenue was the second highest on record. This segment has been quite variable. As a reminder, Q2 was a favorable turn-around from Q1, which was relatively weak ($239k) and attributed to a temporary pause of one of CYRX's clients' trials. Unfortunately the strength in Q2 did not last as, per management's comments, animal clinical trial variability resulted in a slowdown into Q3. But, with the clinical activity expected to accelerate in the coming quarters, we think Animal Health will return to growth in 2019.

Relative to reproductive medicine, Q3 revenue was $584k – up 43% yoy, up 17% from Q2 and a new record high. Reproductive medicine has been a solid contributor and growing at double-digit rates. The catalysts and (partially offsetting) headwinds had remained fairly constant – although Q3 was a bit different. The catalyst side includes a very frothy domestic IVF market which has been furthered stoked by Cryoport's targeted marketing campaigns and recent introduction of CryoStork Next Flight Out service (which launched in early 2017). This helped push domestic revenue up by 44% in 2017 and nearly 28% through the first nine months of 2018.

We also like the macro fundamentals of the domestic IVF market. New technologies related to egg-freezing, more accurate and less-invasive diagnostics and the fact that IVF can be a highly profitable business (and not reliant on third-party reimbursement) have all been cited as reasons for a recent spike in private equity investments in IVF clinics. Frothiness of the IVF space has also prompted consolidation. And CYRX remains resilient on building out capabilities and offerings in their reproductive medicine business. Most recently, this included CryoStork Insurance, a complement to their CryoStork Next Flight Out service. Both cater to the IVF segment. CryoStork insurance, which will only be available to Cryoport clients and their patients, mitigates risk of loss of during shipping. Given that IVF is largely a patient-pay business and is expensive (average cost of an IVF cycle is ~$12k), we think that there could be meaningful demand for CryoStork Insurance. It also provides additional differentiation between CYRX's shipping and logistics solutions and their competitors.

Meanwhile, CYRX's international reproductive medicine segment had struggled for several quarters as a result of recently implemented restrictions related to medical tourism by certain countries. While International reproductive medicine revenue was down 33% in 2017 and fell 1% through the first six months of 2018, it (surprisingly, to us) rebounded in Q3. International reproductive medicine revenue was up 102% yoy in Q3 which pushed YTD revenue into the black by 23%. While some of the international growth is indoubtedly aided by easier yoy comps, it is not year clear if the OUS business will return to longer-term growth.

**Gross Margin, OpEx:** *GM bit a bit by new facilities, strict expense control solidying operating leverage…*

Q3 gross margin was 51.8%, while down from 53.5% and 54.1% in Q3'17 and Q2'18, respectively, the difference is explained by expenses associated with opening of the two new distribution facilities; in NJ and The Netherlands. And, for context, gross margin was 49.9% in FY2017 – illustrating that while it narrowed in the most recent quarter, it still managed to beat the average of the prior year despite these short-term additional (not-yet-absorbed) expenses. While GM will likely experience some effect from the incremental expenses in the next quarter or two or three, we remain confident that it widens throughout 2019 as revenue growth should absorb the additional spend. Importantly, management continues to guide for this to eventually reach 60%.

Recent margin improvement has been attributed to a combination of pricing increases and operational efficiencies leveraged with higher business volumes. While we continue to expect fairly regular widening of gross margin, we note that it may continue to show some q-to-q volatility. Nonetheless, we model gross margin to average approximately 53% throughout 2018 and believe management's goal of eventually reaching 60% is realistic.

Meanwhile, operating expenses were $4.9M in Q3. While up $1.3M yoy, it is flat from Q2'18 and inline with our estimate. Additionally, the yoy increase is much less than the $2.0M growth in revenue over the same period. It is

this operating leverage that has us encouraged that, particularly as GM widens with COGS absorption, operating profitability could rapidly approach. OpEx as a percentage of revenue was just 92.7% in Q3'18 – a record low.

While the new facilities mean incremental opex and capex, that we think the additional costs and expenses are likely to be rapidly absorbed by revenue growth and continued margin expansion. With expected accelerated growth in revenue from just Kymriah and Yescarta, at least a portion of this additional capacity will be almost immediately put to use. Additionally, these facilities are modular in design – allowing for incremental capacity to be added as future demand dictates. All of this should mean that, while the additional infrastructure expenses are not insignificant, that absorption could be fairly rapid and risk of extended periods of overcapacity (and the related cost) largely mitigated.

**Cash**

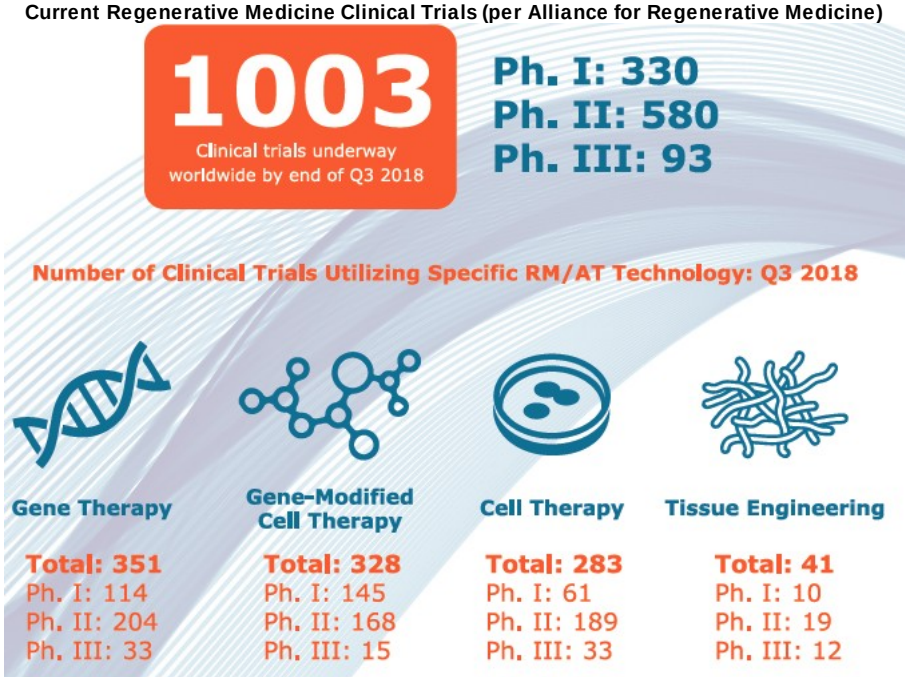
CYRX used $664k and $3.0M ($290k and $1.6M, ex-changes in working capital) of cash for operating activities through the three and nine months ending 9/30/18, compared to $965k and $2.4M ($794k and $2.5M, ex-changes in working capital) in the comparable prior-year periods. Meanwhile, PP&E-related capex was $1.8M thorugh the first nine months of 2018, compared to $1.2M in the prior year.

Cash balance, bolstered during the quarter from $3.4M of (net) proceeds from the sale of common shares through a recently secured ATM (with Jefferies) and $2.0M from the exercise of derivatives, was $23.7M at quarter-end. At the current (operating and investing) burn rate, current cash balance represents more than two years' worth of operating funds. We do, however, anticipate profitability to improve and cash burn to moderate with expected acceleration in biopharma revenue growth.

**Operational Update:**

**Biopharma:** Of the current 295 clinical trials that CYRX is currently supporting, the majority are in the regenerative medicine space – the outsized growth of that market over just the last few years has clearly created demand-pull for cryogenic shipping and related services. And clearly CYRX, with their expertise in cryogenic shipping and logistics including their real-time temperature monitoring and tracking capabilities, has been the beneficiary of the strict requirements aimed at ensuring the safety and viability of biological material during handling, transport and storage. Current estimates are that 1,003 (up from 946 at end of 2017 and 804 at end of 2016) regenerative medicine clinical trials are now ongoing. This includes 93 phase III trials.

**Current Regenerative Medicine Clinical Trials (per Alliance for Regenerative Medicine)**




Importantly, CYRX not only continues to grow the number of clinical trials they are supporting, but also continues to consistently grow the number of late-stage trials it supports – they now support 38 phase III and 132 phase II trials, up from 20 and 82, respectively, one-year ago. Later stage trials, which typical have significantly larger patient enrollments than earlier phases, offer similarly greater revenue potential to CYRX.

And while supporting clinical trials can be a meaningful revenue contributor, logistics and shipping support for a commercialized product could be much more significant. For reference management estimates that the potential revenue range for support of a phase I program is $15k - $75k, phase II is $75k - $125k, phase III is $200k - $1M and for a commercialized product is $2M - $20M.

**Rapid Growth of Regenerative Market, Regulatory Submissions**

CYRX is in a potentially enviable position given their relative dominance in high-value cryogenic logistics, shipping and support, recent rapid growth of the regenerative medicine market and changes at FDA designed to streamline approval processes.

The number of regenerative medicine clinical trials has grown at a CAGR of more than 20% over the last few years and, catalyzed by a near doubling of investment dollars that poured into the space over the last 12 months, is expected to remain robust.

FDA has helped facilitate growth of this market. Regenerative Medicine Advanced Therapy (RMAT) designation, part of the new 21st Century Cures Act, provides an accelerated approval pathway for regenerative medicine therapies that target unmet needs for serious diseases and conditions and which have shown initial efficacy. FDA release draft guidance in November 2017 related to expedited approval pathways and RMAT designation. The agency followed in June 2018 with a complementary framework around gene therapy approval pathways. We think it is clear that FDA recognizes the importance of gene therapy and their potential to make significant strides in improving patient care. FDA's most recent guidance is also focused on manufacturing quality and standards for gene therapies. While regulation is often seen as an impediment to progress, additional regulation, oversight and guidance of these therapies is likely a benefit to CYRX given their expertise – another competitive differentiation.

Accelerated pathways such as RMAT are an incentive for development and should further promote investment in regenerative therapies. Per Scott Gottleib, there have been 28 RMAT designations granted so far (our list below includes 23 of the 28 and is aggregated from information by bioinformant.com) – and CYRX is supporting the majority of these therapies.

**RMAT Designtation (SOURCE: BioInformant.com)**

| COMPANY | PRODUCT | INDICATION | YEAR |
|---|---|---|---|
| Asterias Biotherapeutics | AST-OPC1 | Spinal Cord Injury (SCI) | 2017 |
| Athersys | MultiStem | Ischemic Stroke | 2017 |
| Bluebird Bio | LentiGlobin | Severe Sickle Cell Disease | 2017 |
| Cellvation Inc. (Fortress Biotech Co.) | CEVA101 | Traumatic Brain Injury (TBI) | 2017 |
| Humacyte, Inc | Humacyl | Vascular Access for Hemodialysis | 2017 |
| Enzyvant | RVT-802 | DiGeorge Syndrome | 2017 |
| jCyte | jCell | Retinitis Pigmentosa (RP) | 2017 |
| Juno Therapeutics | JCAR017 | Lymphoma (large B cell NHL) | 2017 |
| Kiadis Pharma | ATIR101 | Leukemia | 2017 |
| Mallinckrodt Pharmaceuticals | Stratagraft | Thermal Burns | 2017 |
| Mesoblast, Ltd. | MPC-150-IM | Heart Failure | 2017 |
| Vericel Corporation | Ixmyelocel-T | Dilated Cardiomyopathy | 2017 |
| Abeona Therapeutics | EB-101 | Recessive RDEB | 2018 |
| Abeona Therapeutics | ABO-102 | Sanfilippo Syndrome Type A (MPS IIIA) | 2018 |
| Audentes Therapeutics, Inc | AT132 | X-linked Myotubular Myopathy (XLMTM) | 2018 |
| AxoGen, Inc. | Avance® Nerve Graft | Peripheral nerve repair | 2018 |
| Caladrius Biosciences | CLBS14 (CD34+ cell therapy program) | Refractory angina | 2018 |
| Capricor Therapeutics | CAP-1001 | Duchenne muscular dystrophy (DMD) | 2018 |
| Cellerant Therapeutics, Inc. | Romyelocel-L (human myeloid progenit | Prevention of Iinfections During Neutropenia | 2018 |
| MiMedx Group | AmnioFix® Injectable | Osteoarthritis (OA) of the knee | 2018 |
| Nightstar Therapeutics | NSR-REP1 | Choroideremia (progressive vision loss) | 2018 |
| Poseida Therapeutics | P-BCMA-101 | Relapsed/Refractory Multiple Myeloma | 2018 |
| Voyager Therapeutics | VY-AADC | Advanced Parkinson's disease | 2018 |

**Investment Increasing in Regenerative Medicine Space (per Alliance for Regenerative Medicine)**




Growth and increased investment in the regenerative medicine market has benefitted CYRX. The number of new BLA/EMA filings of therapies that CYRX had supported in clinical trials continues to grow – and included five in just the first six months of 2018 and is expected to include one more by current year-end. With ~85% of these filings expected to result in approvals and CYRX having already supported (most, if not all of) their respective clinical trials, the company could more than triple the number of commercial therapies that they support (from two, currently) within the next few months.

***Ramping Roll-Out of Yescarta and Kymriah Should Directly Benefit CYRX…***

With indications that commercial activities of both of their currently-supported CAR-T products are accelerating and CYRX beefing up infrastructure (including opening two new logistics centers and upgrading software and tracking) and support functionality (including adding headcount) to meet the anticipated new demand, all indications are that commercial-support related revenue should continue to ramp from the $55k generated in Q3 '18. Based on current consensus analyst estimates, combined sales of Yescarta and Kymriah are forecasted to grow from $374M in 2018 to $923M in 2019 and to more than $1.5B in 2020.

We expect CYRX's commercialization-support revenue to steepen in fairly short order. Gilead/Kite (Yescarta) and Novartis (Kymriah) are aggressively pursuing additional indications for their recently approved respective CAR-T therapies, success of which will automatically bolt on additional revenue opportunity for CYRX.

GILD and NVS are ramping roll-out activities for their respective immunotherapies – aggressiveness which should directly benefit CYRX's revenue. GILD's Yescarta was approved in October 2017 for r/r DLBCL and generated $75M and $183M in the three and nine months ending 9/30/18. GILD currently has 64 cancer centers authorized to treat patients (up from 40 as of April and 60 as of August), which GILD estimates is enough to treat at least 80% of Yescarta eligible patients in the U.S.

In August Yescarta received approval in Europe for r/r DLBCL and launch could be imminent. GILD noted on October 25, 2018 that they are "working diligently across Europe to certify approximately 20 centers by the end of

2018." They are also opening a manufacturing facility very near where CYRX's new facility is located in Amsterdam.

Importantly, GILD has indicated that 2018 is a focus on increasing the number of authorized treatment locations – and has implied that they expect a much more significant ramp in treatment activity in 2019 and beyond (which may also have the benefit of additional indications on the label). This is important to keep in mind, given that CYRX's commercial revenue will likely be highly correlated to the ramp in treatment activity of their commercial supported immunotherapies.

Current analysts consensus estimates are for Yescarta (in all indications and worldwide) to generate revenue of: 2018 $285M, 2019 $591M, 2020 $984M, 2021 $1.4B, 2022 $1.7B

**NVS'** Kymriah received approval in the U.S. for its initial indication, treatment of children and young adults with r/r B-cell ALL, in August 2017. FDA approval of its second indication, treatment of children and young adults with r/r DLBCL, came in May 2018. Then in August and September 2018 Kymriah received approval in Europe and Canada, respectively, for these same two indications. Regulatory filings have also been made in Japan and Australia.

Kymriah generated $20M and $48M of revenue in the three and nine months ending 9/30/18. NVS management noted on the Q2 call that they have experienced some manufacturing variability – while not clear how significant of an issue, it does sound like it has been a headwind to initial growth and may continue to be, at least over the near-term. On the Q3 call management noted that despite the manufacturing issues that physicians continue to order Kymriah. NVS also noted that they have addressed the domestic manufacturing issue. Manufactruring in China has also been secured – a requirement to commercialize in that country and to provide a more global supply. Additionally, NVS plans on building their own manufacturing facility in Switzerland – presumably for supply to Europe. CYRX indicated that they continue to work with both GILD and NVS on their respectivel global commercial roll-outs and expansions. Current analysts consensus estimates are for Yescarta (in all indications and worldwide) to generate revenue of: 2018 $89M, 2019 $332M, 2020 $520M, 2021 $664M, 2022 $752M. We note, however, that analyst estimates have been significantly too optimistic since the beginning of the year.

**And CYRX Could Be Supporting More Commercial Therapies Soon…**
With each commercial contract expected to generate in the range of $2M - $20M per year, CYRX could very likely be heading into 2019 with a commercial-support portfolio worth at least $18M in just the first year. And $18M could prove highly conservative, depending on the ramp of their two current commercial contracts, Yescarta and Kymriah, as well as the respective value of the commercial markets of the outstanding BLAs.

An estimated ~85% of BLA/EMA filings are expected to result in eventual regulatory approval. This implies that just CYRX's current slate of BLA-filed supported therapies represents an estimated $8.5M - $85M (adjusted for ~15% chance of regulatory failure) in incremental annual revenue and the anticipated upcoming (by current year-end) BLA filings represents another ~$15M - $150M of annual revenue. We think this ~$15M - $150M run-rate of estimated incremental annual revenue might be achievable within three to four years. And, successful progression of the clinical trial support pipeline to later stages and to eventual regulatory submission could substantially increase the potential unrealized future revenue curve.

For context, if just one-half of the phase III trials that CYRX currently supports results in a commercialized product and each for just one indication, the incremental annual revenue is estimated to be between $34M and $340M. If just 5% of CYRX's current phase I and phase II pipeline (combined) results in a single-indication commercialized therapy, that would add another estimated $22M to $220M in annual revenue.

**Valuation: $17/share**
The total number of clinical trials that CYRX supports has increased by an average of nine per month over the last 18 months, with phase II and phase III trials (i.e. mid-to-late stage trials) increasing at a rate of five per month over that same period.

Our assumptions are also based on the additional history of evidence supporting the 'stickiness' of these clinical trial clients – that is, when CYRX supports a particular therapy in clinical trials, there is a very high likelihood that the client will retain CYRX for later-stage trials and (if eventually approved) for commercialization. In addition, the number of new BLA/EMA filings of therapies that CYRX had supported in clinical trials continues to grow – and included five in just the first nine months of 2018 and is expected to include one more by current year-end.

An estimated ~85% of BLA/EMA filings are expected to result in eventual regulatory approval. This implies that just their current slate of BLA-filed supported therapies represents an estimated $8.5M - $85M (adjusted for ~15% chance of regulatory failure) in incremental annual revenue and the anticipated upcoming (by current year-end) BLA filings represents another ~$7M - $70M of annual revenue. We think this ~$15M - $150M run-rate of estimated incremental annual revenue might be achievable within three to four years. And, as noted above, successful progression of the clinical trial support pipeline to later stages and to eventual regulatory submission could substantially increase the potential unrealized future revenue curve.

**Kymriah / Yescarta**
As we only have three full quarters of sales of these CAR-T therapies and revenue to CYRX for commercial support, we do not have a lot of confidence that our currently calculated commercial support multiple will not change in the future. As it is now, CYRX generated ~$1.3M of commercial support revenue in the first nine months of 2018 and, over the same period, GILD and NVS have, combined, recognized revenue of $231M from the sales of Yescarta and Kymriah. This implies CYRX has generated approximately $0.0058 for every $1 in recognized revenue of these two therapies. We aknowldege that there are substantial limitations to this methodology but also believe, given the lack of any other usable metrics, that it is a reasonable approach (at least for now).

We round this multiple up to $0.006 and apply it to current analyst consensus sales forecasts of Kymriah and Yescarta (combined) to estimate CYRX's commercial revenue from support of these two therapies. We also assume some pricing power, or otherwise favorable multiple expansion as time passes. We model a multiple of $.0070 in 2019 and beyond.

Using this methodology, we think CYRX generates commercial support revenue related to Kymriah and Yescarta of $2.15M in 2018, $6.5M in 2019 and $10.8M in 2020.

**New Commercial Support**
Estimating revenue from new commercial support is much more difficult given the additional unknowns. But, we think, given the reasons listed earlier, that new commercial revenue will eventually materialize and, therefore warrants additional attention in modeling. The range of the extent of new commercial revenue (as also explained earlier) is enormous and the unknowns of the commercial support pipeline vast. So, until we have better information to use for estimating new commercial revenue, we will use our forecasted Kymriah and Yescarta revenue curves as a rough guide. We now assume two new commercial support therapies come online and generate approximately $2M in 2019, $8M in 2019 and $15M in 2020 – which is approximately reflective of the forecasted revenue from Kymriah and Yescarta (with a one-year lag). Our new commercial support revenue, along with all other model inputs, will be updated as information flow warrants. This potentially includes additional assumed commercial support agreements.

**Clinical Trial Support**
We expect clinical trial support will continue to account for the majority of total revenue through at least 2020, but at progressively declining proportional contribution. CYRX added 85 clinicial trials in 2017 and, based on the YTD 2018 run-rate, are on track to add about 108 in FY2018. For simplicity, we assume approximately 90 are added in 2019 and again in 2020. The clinical trial multiple has contracted from a quarterly average of almost $23k during 2017 to about $15k through the first nine months of 2018. However, this multiple has remained right around $15k since Q4 '17 – which we think relates to the increasing number of mid-to-late stage clinical trials. We assume slight contraction through through 2019 and 2020. This results in estimated clinical trial support revenue of $14.5M in 2018, $20.5M in 2019 and $25.6M in 2020.

**Valuation**
The addition of CYRX to the Russell 2000 and Russell 3000 indices in provides more liquidity in the stock, which we have always treated as a reduction to risk discount - which we have moved from 15% to 11%.

Average comparable PE/G ratio is 1.8 which is applied to our forecasted revenue growth rate of 58% through fiscal 2023 and discounted it back to the present at 11%. Calculted present value is approximately $17/share.

| Inputs | | | CYRX | | | | |
|---|---|---|---|---|---|---|---|
| Treasury | Disc Rate | Ind. PE/G | Beta | 5yr G | Yr5 EPS | Yr5 Value | PV |
| 3.06% | 11.0% | 1.82 | 2.49 | 58% | $0.22 | $23.2 | **$16.98** |

## FINANCIAL MODEL

**CryoPort Inc.**

| | 2016 A | 2017 A | Q1 A | Q2 A | Q3 A | Q4 E | 2018 E | 2019 E | 2020 E |
|---|---|---|---|---|---|---|---|---|---|
| Commercialized support | | $100 | $318 | $446 | $555 | $829 | $2,149 | $8,461 | $18,829 |
| All other biopharma | | $9,013 | $2,964 | $3,403 | $3,917 | $4,219 | $14,502 | $20,517 | $25,618 |
| Biopharma total | $5,302 | $9,113 | $3,282 | $3,849 | $4,472 | $5,048 | $16,651 | $28,978 | $44,447 |
| Trailing clinical trial multiple | $108.20 | $90.81 | $13.85 | $14.42 | $15.18 | $14.30 | $80.57 | $74.00 | $70.00 |
| *YOY Growth* | *57.7%* | *71.9%* | *62.3%* | *72.7%* | *90.6%* | *100.6%* | *82.7%* | *74.0%* | *53.4%* |
| *QoQ Growth* | | *13.4%* | *30.4%* | *17.3%* | *16.2%* | *12.9%* | *19.2%* | - | - |
| *%of total revenue* | *69.0%* | *76.2%* | *81.6%* | *83.2%* | *84.6%* | *86.8%* | *84.3%* | *88.3%* | *90.3%* |
| New clinical trials added | | 85 | 22 | 22 | 37 | 25 | 106 | 89 | 88 |
| **Total clinical trials supported** | **99** | **180** | **236** | **258** | **295** | **320** | **277** | **366** | **454** |
| *QoQ Growth* | *21.9%* | *13.7%* | *10.3%* | *9.3%* | *14.3%* | *8.5%* | *10.6%* | *32.0%* | *24.0%* |
| *YOY Growth* | *102.6%* | *81.4%* | *69.8%* | *50.0%* | *51.3%* | *49.5%* | *54.0%* | *32.0%* | *24.0%* |
| Commercial Support Programs | | | | | | | | | |
| CYRXrev from Yescarta (Kite/Gilead) | | | $245 | $361 | $438 | $592 | $1,636 | $4,137 | $7,085 |
| Yescarta analyst estimates | | $7,000 | $40,000 | $68,000 | $75,000 | $102,000 | $285,000 | $591,000 | $984,000 |
| CYRX rev from Kymriah (Novartis) | | | $73 | $85 | $117 | $238 | $513 | $2,324 | $3,744 |
| Kymriah analyst estimates | | $20,000 | $12,000 | $16,000 | $20,000 | $41,000 | $89,000 | $332,000 | $520,000 |
| CYRX rev from Other Pharma | | | | | | | $0 | $2,000 | $8,000 |
| Other analyst estimates | | | | | | | $0 | | |
| **Total Commercial Support** | | **$100** | **$318** | **$446** | **$555** | **$829** | **$2,149** | **$8,461** | **$18,829** |
| *YOY Growth* | | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *729.4%* | *2048.6%* | *293.8%* | *122.5%* |
| *%of Biopharma revenue* | | *1.1%* | *8.8%* | *10.4%* | *11.0%* | *14.1%* | *11.4%* | *22.6%* | *29.8%* |
| *%of total revenue* | | *0.8%* | *7.9%* | *9.6%* | *10.5%* | *14.3%* | *10.9%* | *25.8%* | *38.2%* |
| **Total Drug Sales** | | **$27,000** | **$52,000** | **$84,000** | **$95,000** | **$143,000** | **$374,000** | **$923,000** | **$1,504,000** |
| *YOY Growth* | | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *1285.2%* | *146.8%* | *62.9%* |
| Reproductive medicine | $1,532 | $1,707 | $502 | $499 | $584 | $526 | $2,111 | $2,638 | $3,430 |
| *YOY Growth* | *18.6%* | *11.4%* | *20.1%* | *17.1%* | *42.8%* | *15.8%* | *23.6%* | *25.0%* | *30.0%* |
| *QoQ Growth* | *11.4%* | *-0.3%* | *10.6%* | *-0.6%* | *17.0%* | *-10.0%* | *4.3%* | *5.7%* | *20.0%* |
| *%of total revenue* | *20.0%* | *14.3%* | *12.5%* | *10.8%* | *11.1%* | *9.0%* | *10.7%* | *8.0%* | *7.0%* |
| Animal health | $845 | $1,134 | $239 | $279 | $229 | $243 | $990 | $1,188 | $1,366 |
| *YOY Growth* | *-1.3%* | *34.2%* | *-12.1%* | *6.5%* | *-7.7%* | *-31.0%* | *-12.7%* | *20.0%* | *15.0%* |
| *QoQ Growth* | *6.4%* | *14.6%* | *-32.1%* | *16.7%* | *-17.9%* | *6.1%* | *-6.8%* | *-257.5%* | *-25.0%* |
| *%of total revenue* | *11.0%* | *9.5%* | *5.9%* | *6.0%* | *4.3%* | *4.2%* | *5.0%* | *3.6%* | *2.8%* |
| Shipping revenue | $7,679 | $11,954 | $4,023 | $4,627 | $5,285 | $5,816 | $19,751 | $32,804 | $49,243 |
| Total Revenues | $7,678.8 | $11,954.3 | $4,023.2 | $4,627.0 | $5,285.0 | $5,816.5 | $19,751.7 | $32,803.7 | $49,242.6 |
| *YOY Growth* | *39.0%* | *55.7%* | *48.3%* | *58.6%* | *76.0%* | *75.1%* | *65.2%* | *66.1%* | *50.1%* |
| Cost of Revenues | $4,577.4 | $5,987.8 | $1,838.8 | $2,123.3 | $2,549.3 | $2,791.9 | $9,303.4 | $14,368.0 | $20,091.0 |
| Gross Income | $3,101.4 | $5,966.4 | $2,184.4 | $2,503.7 | $2,735.7 | $3,024.6 | $10,448.3 | $18,435.7 | $29,151.6 |
| *Gross Margin* | *40.4%* | *49.9%* | *54.3%* | *54.1%* | *51.8%* | *52.0%* | *52.9%* | *56.2%* | *59.2%* |
| SG&A | $11,269.4 | $12,653.2 | $3,652.9 | $4,520.3 | $4,433.9 | $4,606.6 | $17,213.8 | $20,797.6 | $27,822.1 |
| *%SG&A* | *146.8%* | *105.8%* | *90.8%* | *97.7%* | *83.9%* | *79.2%* | *87.2%* | *63.4%* | *56.5%* |
| R&D | $598.1 | $1,205.7 | $329.7 | $448.6 | $463.4 | $498.6 | $1,740.3 | $2,449.0 | $2,787.0 |
| *%R&D* | *7.8%* | *10.1%* | *8.2%* | *9.7%* | *8.8%* | *8.6%* | *8.8%* | *7.5%* | *5.7%* |
| Operating Income | ($8,766.1) | ($7,892.5) | ($1,798.3) | ($2,465.2) | ($2,161.6) | ($2,080.7) | ($8,505.8) | ($4,810.9) | ($1,457.5) |
| *Operating Margin* | *-89.8%* | *-66.0%* | *-44.7%* | *-53.3%* | *-40.9%* | *-35.8%* | *-43.1%* | *-14.7%* | *-3.0%* |
| Other income, net | ($1,936.6) | $14.3 | $15.8 | $7.1 | $19.7 | $27.4 | $70.0 | $12.2 | $6.0 |
| Interest income, net | ($139.4) | ($15.7) | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $2.0 | $16.0 |
| Loss on asset sale | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| Change in derivative value | ($2,265.4) | $0.0 | ($899.4) | $0.0 | $0.0 | $0.0 | ($899.4) | $0.0 | $0.0 |
| Pre-Tax Income | ($13,107.5) | ($7,893.9) | ($2,681.9) | ($2,458.1) | ($2,141.9) | ($2,053.3) | ($9,335.2) | ($4,796.7) | ($1,435.5) |
| Taxes | $5.4 | $5.1 | $0.8 | $12.8 | $2.1 | $2.1 | $17.8 | $0.0 | $0.0 |
| *Tax Rate* | *0.0%* | *-0.1%* | *0.0%* | *-0.5%* | *-0.1%* | *-0.1%* | *-0.2%* | *0.0%* | *0.0%* |
| Net Income | ($13,188.4) | ($7,899.0) | ($2,682.8) | ($2,470.9) | ($2,144.0) | ($2,055.3) | ($9,353.0) | ($4,796.7) | ($1,435.5) |
| *YOY Growth* | *34.0%* | *-40.1%* | *49.9%* | *32.8%* | *8.3%* | *-9.4%* | *18.4%* | *-48.7%* | *-70.1%* |
| *Net Margin* | *-171.7%* | *-66.1%* | *-66.7%* | *-53.4%* | *-40.6%* | *-35.3%* | *-47.4%* | *-14.6%* | *-2.9%* |
| EPS | ($0.93) | ($0.34) | ($0.10) | ($0.09) | ($0.07) | ($0.07) | ($0.33) | ($0.14) | ($0.04) |
| *YOY Growth* | *-43.8%* | *-62.9%* | *-1.4%* | *14.5%* | *-7.3%* | *-21.3%* | *-3.7%* | *-66.0%* | *-85.6%* |
| Diluted Shares O/S | 14,192 | 22,937 | 26,774 | 27,809 | 28,770 | 29,405 | 28,189 | 34,000 | 38,000 |

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