ANNUAL REPORT

2022

Taking care of people.

OUR DIVERSITY, EQUITY AND INCLUSION SURVEY SAYS:

95%

Feel that we treat each other with respect

94%

Feel that they are an accepted member of their team

91%

Believe that Kinaxis leadership is committed to DEI

Protecting the planet.

Carbon neutral for 2021

Strengthening corporate sustainability

tree-nation

25,975 trees planted
21.48 hectares reforested

Committed to a sustainable, socially responsible future

Kinaxis aims to constantly improve our environmental, social and governance (ESG) performance. Making the world a better place is central to our culture, people and product. Our ESG strategy is overseen from the very top, by the Nominating and Governance Committee of our Board, extends throughout the organization as one of our core strategic pillars, and focuses on four core commitments: protecting the planet, taking care of people, giving back and building trust. Our concurrent planning approach helps our customers improve their sustainability by reducing wasted product, delivering critical goods when and where needed, reducing carbon output and helping to enable a circular economy.

Kinaxis' ESG performance is being recognized by key rating agencies.

Kinaxis has received top marks from several key ESG rating agencies, including our recent Triple A designation from MSCI, and our inclusion in Sustainalytics' 2023 Top-Rated ESG Companies list, in the software category.

We encourage you to read our Global Impact Report for 2022.

A leader in supply chain planning

Everyday volatility and uncertainty demand quick action. Kinaxis® (TSX:KXS) delivers software-as-a-service (SaaS) solutions that enable the agility to make fast, confident decisions across integrated business planning and the digital supply chain. People can plan better, live better and change the world. Trusted by innovative brands, we combine human intelligence with AI and concurrent planning to help companies plan for any future, monitor risks and opportunities, and respond at the pace of change. Powered by an extensible cloud-based platform, Kinaxis delivers industry-proven applications so everyone can know sooner, act faster and remove waste.

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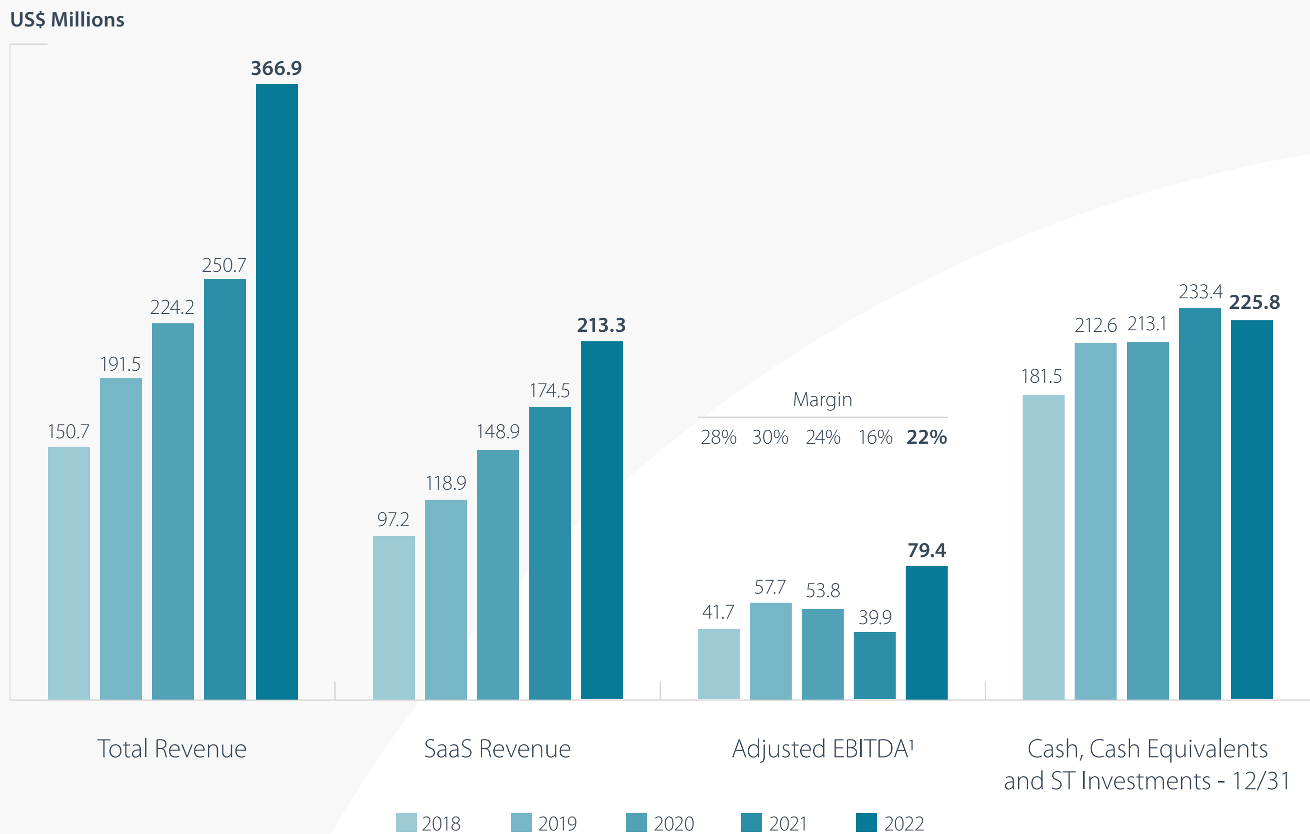
Financial Highlights

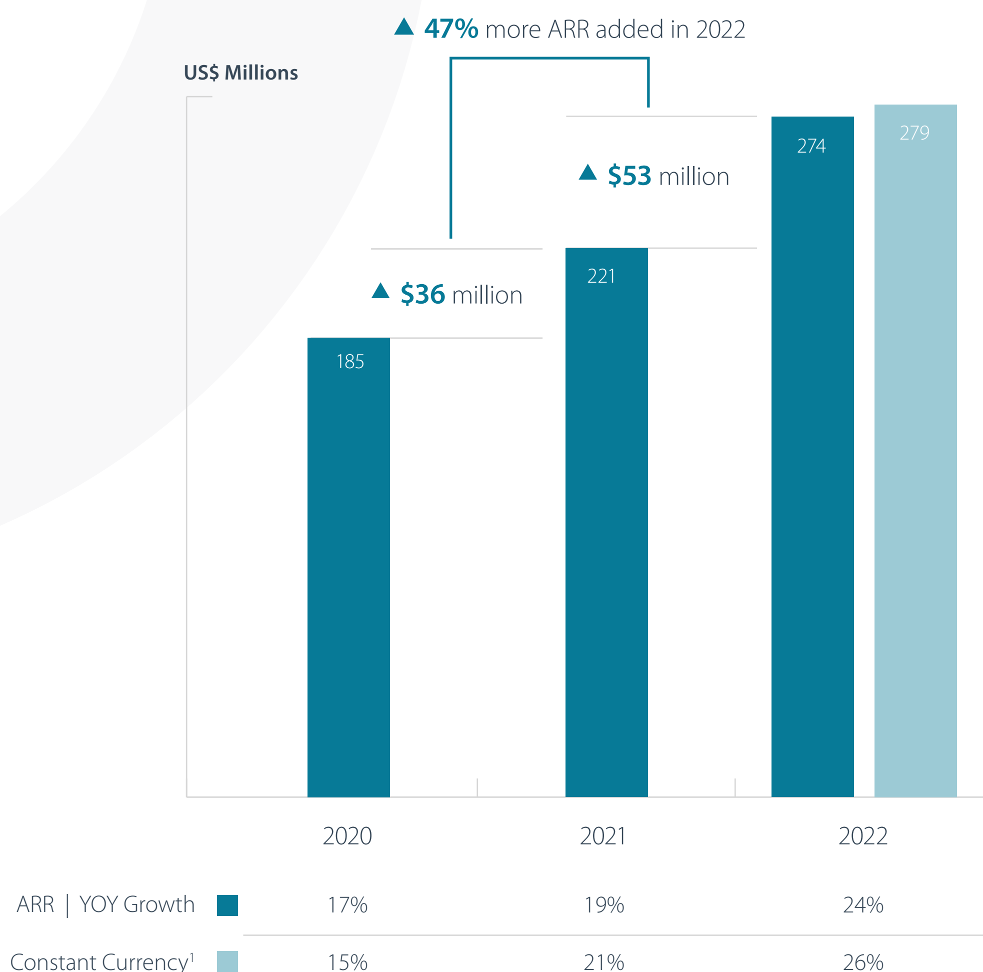
Kinaxis customers sign multi-year subscription agreements for our RapidResponse® supply chain planning platform. The business model provides a predictable, recurring revenue base that has grown rapidly over time as we have added new customers across seven vertical markets and expanded deployments with our existing customers. Even as we have continued to make significant strategic investments in the growth of our business, our operations have continued to generate significant cash.



[1] *Adjusted EBITDA is a non-IFRS measure. For reconciliation of Adjusted EBITDA to profit, please see "Management's Discussion & Analysis"*

Annual Recurring Revenue (ARR)[2]

Our ARR is the total annualized value of recurring subscription amounts (ultimately recognized as SaaS, Subscription Term Licenses and Maintenance & Support revenue) of all subscription contracts at a point in time. Such amounts are determined solely by reference to the underlying contracts, and are normalized for the varying revenue recognition treatments under IFRS for cloud-based versus on-premise subscription amounts. We believe that ARR provides an excellent indication of the current growth of our subscription business at a moment in time.

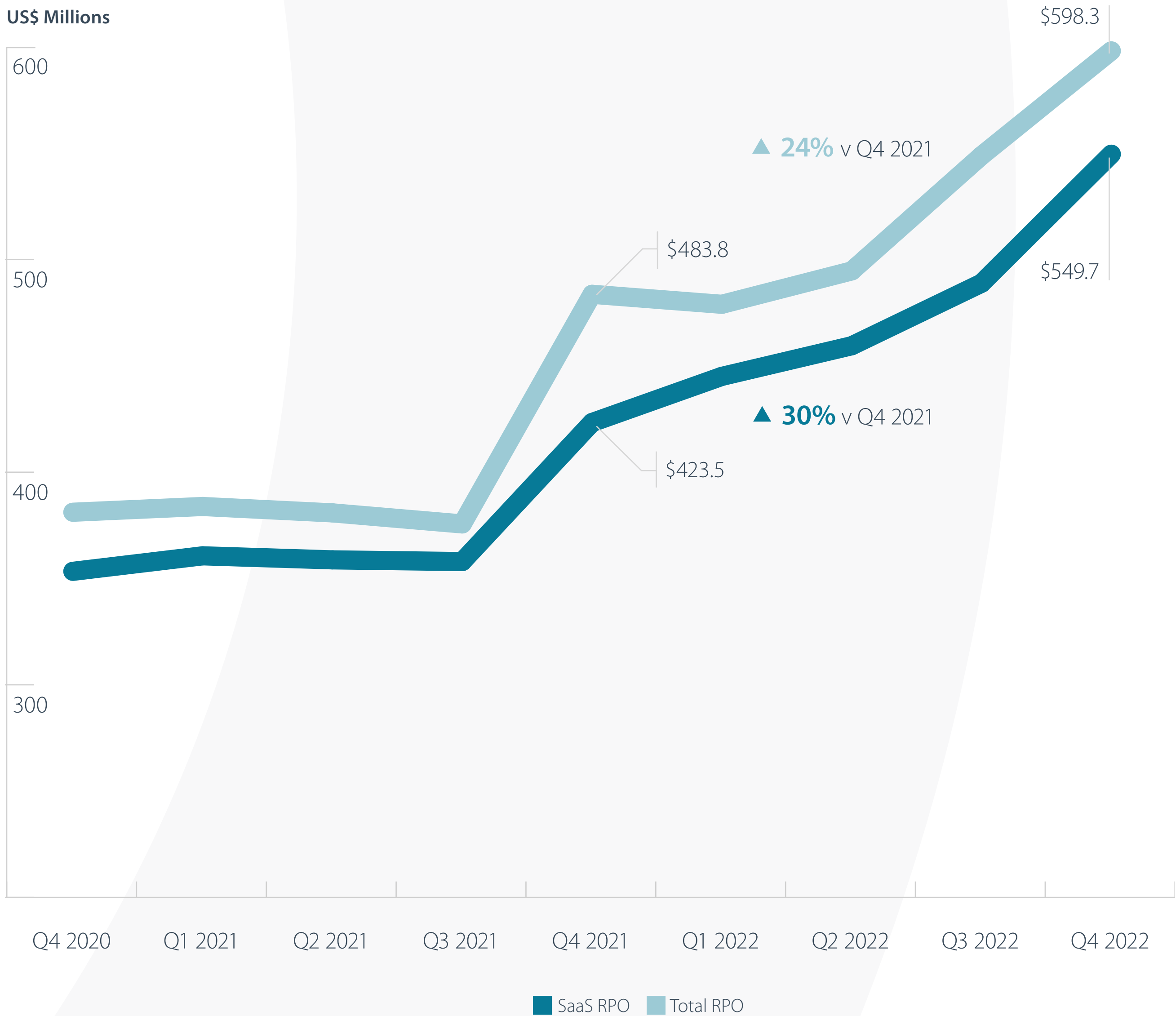


	2020	2021	2022
ARR | YOY Growth	17%	19%	24%
Constant Currency[1]	15%	21%	26%

[2] *For ARR, annualized subscription amounts are determined solely by reference to the underlying contracts, and are normalized for the varying revenue recognition treatments under IFRS for cloud-based versus on-premise subscription amounts. It excludes one-time fees, such as for non-recurring professional services, and assumes that customers will renew the contractual commitments on a periodic basis as those commitments come up for renewal unless such renewal is known to be unlikely. ARR is not a recognized measure under IFRS and does not have a standardized meaning prescribed by IFRS. Accordingly, non-IFRS measures and industry metrics should not be considered in isolation nor as a substitute for analysis of our financial information reported under IFRS.*

Remaining Performance Obligation (RPO)

Our RPO represents revenue that we expect to recognize in the future related to firm performance obligations that are unsatisfied (or partially unsatisfied) on December 31, 2022, for our signed multi-year contracts. It is a good indicator of our secured business at a moment in time.



Letter to Shareholders

Quite simply, 2022 was a phenomenal year for Kinaxis. Our SaaS revenue, the primary driver of our business, grew 22% and our Adjusted EBITDA[1] margin (our key profitability metric) was 22% of revenue. Adding these two figures together, we exceeded Rule of 40[2] performance for the year – a test widely-used by investors to identify elite performance by software companies. If we eliminate the negative impacts of fluctuations in certain foreign currencies we sell in, the results were even better. Our constant currency[1] estimates showed 28% SaaS revenue growth and an Adjusted EBITDA[1] margin of 23%, both significantly beating the initial outlook we communicated for 2022. I couldn't be prouder of the team for their remarkable efforts in 2022.

A spotlight on supply chain

Ever since the pandemic began over three years ago, we have seen a sharp increase in demand for our products. The widespread disruption in supply chains shone a spotlight on legacy approaches to planning that aren't sufficiently agile, connected, fast or accurate enough to serve modern supply chains and business. CEOs, CFOs and boards of massive corporations have seen how their mission-critical supply chains were built on siloed applications, disconnected functional teams, batch processing of time-sensitive data, and the use of offline tools like Excel for any meaningful scenario analysis when situations changed – as they always do. We solve all these issues with our modern, real-time concurrent planning approach.

Now that the worst of the pandemic seems to be behind us, we frequently get asked whether that means demand will subside. My answer is no. Business leaders can't "unsee" what the spotlight revealed. Disruption and change, whether big or small, rare or recurring, are inevitable. To be prepared, digital end-to-end supply chain transformation must happen. As a result, in a difficult economic environment that has seen many software companies including some competitors laying off staff and predicting slower growth, we continue to forecast further acceleration in 2023 – acceleration that will be delivered profitably.

Making progress on key growth initiatives

As I discussed in this letter last year, we are in the very early stages of several exciting growth strategies that have increased our total addressable market by a factor of nearly 10, compared to three years ago. Let me review our progress.

40% of new customer wins from the mid-market

Including two acquisitions we made in 2022, we grew our customer base by 40% over the year, giving us a solid foundation for future expansion. Looking just at organic growth, we won approximately 25% more new customers than in 2021 – a tremendous accomplishment. I am particularly pleased that roughly 40% of these new wins came from mid-market customers, a significant growth opportunity for us that we only started to address a couple years ago. We are also beginning to sell to smaller companies globally through relationships with over 25 value-added resellers (VARs) who serve as our first truly indirect channel to market. We look forward to seeing how this growth vector develops over the next couple years.

A bellwether account in retail

We've also expanded our opportunity by adding retail as our seventh targeted vertical market. After substantial product work, we are proving ourselves in a new bellwether account in an important segment of the retail market and will take a focused approach to new opportunities in 2023. Retail represents one of the largest markets we serve, so we are excited to make progress.

Solution extension partners qualifying Kinaxis into more deals

In 2020, we introduced our first solution extension partners. This group takes advantage of our open architecture to develop tightly integrated, domain-specific applications or delivers digital inputs to leverage the power of our unique concurrent planning approach. Today, we have roughly 15 partners who add value to RapidResponse to help our customers solve challenges across their supply chain through more effective planning, sourcing, manufacturing, deliveries or returns. While we earn revenue directly through subscriptions to these applications, many also help us qualify into

We opened our new headquarters in Kanata in January 2022. It was built to conform to the WELL Building Standard, which focuses on seven concepts of health and well-being (air, water, nourishment, light, fitness, comfort, and mind) and how they influence and impact human behaviors.

opportunities where we wouldn't have previously. We fully expect further growth in these important partnerships.

Recent acquisitions to create even more avenues for growth

We added two more growth vectors via acquisition in 2022. First, we bought a small company that was developing a planning solution for a niche supply chain function that we know customers need. We will launch the first version of this product midway through 2023. Second, we purchased MPO, a company based in the Netherlands, that extends Kinaxis' unique concurrent planning approach beyond the loading dock – where our activities typically ended – to plan and track the transportation of finished goods right to end customers' doors and back, if any returns are necessary, to ensure orders are concluded perfectly. Currently, we're selling MPO as both a standalone product and as an integrated component of RapidResponse, as we see strong demand for both opportunities. We will deepen product integration more fully over time for a truly seamless end-to-end experience.

Proudly, a "build first" company

While we are excited about our acquisitions, Kinaxis proudly remains a "build first" company. Our unparalleled history of innovation in our field has been the primary source of our success to date and we fully expect that to continue ahead. Our latest product launch, the award-winning Planning.AI, is now available to customers

and comprises Demand.AI and Supply.AI. The former creates a truer picture of demand by incorporating internal data and outside-in external signals to improve demand and supply plans and deliver insight across all planning horizons using machine learning-based sensing and forecasting. Supply.AI drives costs out of the supply chain by using multiple analytical approaches to solve a wider variety of business problems and balance trade-offs incorporating cost, revenue, on-time delivery, capacity and more. You can read more about Planning.AI and our MPO product later in this annual report.

Committed to a sustainable, socially responsible future

I'm very proud that all these achievements have been won while simultaneously moving our ESG program forward. We continue to fully offset our Scope 1, 2 and 3 carbon emissions annually, and remain focused on removing waste from our customers' supply chains, including through investigation of new functionality that will help support "greener" decision-making. I am thrilled with our recent Triple A designation from leading ESG rating agency, MSCI, and our inclusion in Sustainalytics' 2023 Top-Rated ESG Companies list, in the software category.

More acceleration ahead

As pleased as I am with Kinaxis' performance in 2022, we expect even more for 2023, when we see SaaS revenue growth accelerating to between 25% and 27%. As of December 31, 2022, 86% of this SaaS revenue guidance is already in our committed backlog of signed business. We typically aim for a result near 80%, so this provides exceptionally strong visibility.

We will grow our sales team in 2023 to meet the expanded opportunity we see in front of us, all while continuing to deliver a solid Adjusted EBITDA[1] result, which is expected to be between 13% and 15% of revenue.

I continue to believe we are in the early days of what will be a global transformation of supply chain management solutions. We fully intend to take advantage of our leadership position to deliver maximum value to shareholders. As always, we thank you, our shareholders, for your belief in Kinaxis' opportunity and team.

Sincerely,

John Sicard, President and Chief Executive Officer, Kinaxis Inc.

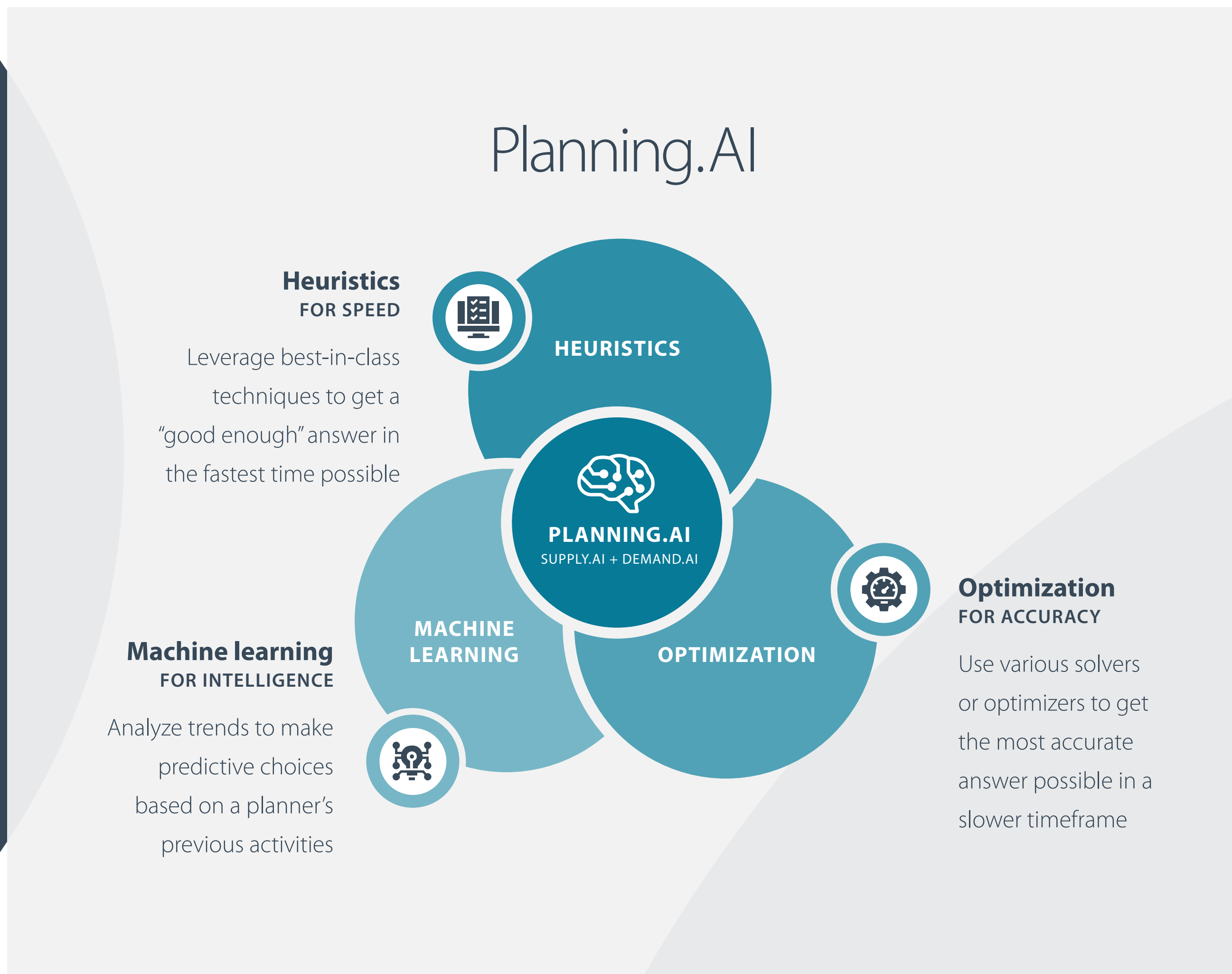
1. Adjusted EBITDA and constant currency metrics are non-IFRS measures. They are not recognized, defined or standardized measures under IFRS and might not be comparable to similar financial measures presented by other issuers. Adjusted EBITDA and other non-IFRS financial measures reported by Kinaxis and reconciliations to the most comparable IFRS financial measure are defined and disclosed under the headings Non-IFRS Measures and Reconciliation of Non-IFRS Measures in our annual management's discussion and analysis which sections are incorporated by reference herein and are available on SEDAR (www.sedar.com).

2. Rule of 40 calculated as the sum of SaaS revenue growth and adjusted EBITDA margin results.

Planning.AI – the next chapter of advanced analytics

Supply chain planners and leaders are trapped, struggling to find the balance between making an accurate decision, or making a fast one. All while the success or failure of their business is on the line. But it doesn't have to be this way. Planners can have accuracy AND speed for the ultimate in supply chain agility.

Kinaxis' award-winning Planning.AI is the next big leap in the use of advanced analytics for supply chain planning. It combines the speed of heuristics, the accuracy of optimization and the intelligence of machine learning – automatically detecting when to use each approach – all working concurrently to solve a single problem in a way no other vendor can.



When applied to today's most complex supply planning challenges, Planning.AI first applies heuristics to a problem, then runs those results through an optimizer or solver. That significantly narrows the scope of what the optimizer must solve for, dramatically reducing the time it takes to get an answer while still preserving the required accuracy. Kinaxis' first two use cases for Planning.AI are Demand.AI and Supply.AI.

Demand.AI

Demand.AI leverages machine learning to gain insights from vast amounts of internal and external data then uses additional analytical approaches as appropriate to improve sensing and forecasting across short- and long-term horizons. Planners can create highly accurate demand forecasts while leveraging analytics, insights, and exception-based workflows to prioritize high value-add work. Demand.AI unearths the true drivers of demand from both internal and external signals, allowing for improved starting points for consensus demand and supply plans.

Supply.AI

Supply.AI drives costs out of the supply chain. It balances trade-offs, incorporating cost, revenue, on-time delivery, capacity and more using new modeling approaches and analytical solvers. Harness existing master data. Leverage flexible business objectives. Plan at any level of granularity. Supply.AI can solve a wide variety of business problems, including *could-be-built* to maximize margin by determining what products to build and how given available supplies and uncommitted capacity, and *common blend*, which lets you make the best use of available APIs and select the optimal processing techniques to maximize total demand satisfied.

Celestica has been focused on getting the most value out of customers' supply materials that had been deemed excess or obsolete. Left unused, these materials simply represent extra cost to their customers, so Celestica is using Supply.AI to ask, "What could be built?"

We expect Planning.AI to help us better support our customers by quickly and accurately determining the best combination of products that could be built using projected on-hand inventory. This will help reduce customers' excess and obsolete materials and significantly improve our planning flexibility in RapidResponse."

MARY SIMPKINS, SCM PROCESS & APPLICATIONS CONSULTANT, CELESTICA

MPO – Kinaxis' evolution from supply chain planning to supply chain management

Kinaxis' supply chain planning activities have typically stopped at the loading dock. Our flagship RapidResponse platform helps our customers plan to deliver the right supplies into production to ensure that the right amount of finished product is available to meet demand at the right time, in the right place, in the most effective and efficient way. However, in 2022 we took our first step into supply chain execution when we purchased MPO, a SaaS company based in the Netherlands, that can extend our unique concurrent planning approach to plan and track the transportation of finished goods right to end customers' doors and back (if any returns are necessary), to ensure orders are concluded perfectly. This broadened scope is the beginning of Kinaxis' evolution to become an end-to-end *supply chain management* vendor.

A key joint customer

One element in Kinaxis' decision to buy MPO was that our long-time customer, Flex, was using MPO as their transport order management vendor. A few years ago, Flex identified a need for a more modern, unified transport its order management approach to replace regional solutions. Existing systems weren't supporting proactive decision-making nor collaboration across geographically dispersed teams. The company put out a request for proposal for a new transport management solution and chose MPO.

Flex

Flex is the manufacturing partner of choice that helps a diverse customer base design and build products that improve the world. Through the collective strength of a global workforce across 30 countries and responsible, sustainable operations, Flex delivers technology innovation, supply chain, and manufacturing solutions to diverse industries and end markets.

170K EMPLOYEES
10K SUPPLY CHAIN PROFESSIONALS
16K SUPPLIERS IN GLOBAL NETWORK
100+ FACILITIES ACROSS 30 COUNTRIES

The challenge

As one of the largest supply chain solutions organizations worldwide, Flex manages design, manufacturing and distribution. An ambitious participant in the circular economy, it also handles repair, mid-life and end-of-life activities that support environmental sustainability. Most of Flex's customers have highly complex supply chains and, when they partner with Flex, gain access to the global organization's network.

"Our focus is on making sure the balance of power sits with our customers, rather than with the multitude of partners they could be dealing with in their networks," said David O'Brien, Senior Director, Business Development. "We're customer-focused and we're partner- and carrier-agnostic."

The solution

MPO's platform includes capabilities for control tower, supply chain visibility, order management, transportation management and returns management. For Flex, the MPO platform enables omnichannel order fulfillment for B2B, B2C, and D2C brand owners, across the Americas, EMEA and APAC on a single, unified cloud platform. In essence, the MPO platform serves as an orchestration solution that optimizes all activity from the receipt of the order all the way through to the point of final delivery.

EXTENDING CONCURRENT PLANNING THROUGH TRANSPORTATION OF FINISHED GOODS

Customer Order Planning

Real-time inventory analytics into availability

Optimized, dynamic allocation

Shipment Order Planning

Split, consolidate, merge orders in transit

Service Order Planning

Real-time alerts, milestones, in-app management

A lot of big players control the freight, and our customers can't always aggregate their orders and optimize their businesses. We try to position ourselves to be able to help them, and our technology platform helps us do that."

DAVID O'BRIEN, SENIOR DIRECTOR, BUSINESS DEVELOPMENT, FLEX

"That optimization enables us to draw a relationship between customer orders, final shipments, and all service actions" says O'Brien, who also appreciates the MPO platform's flexibility and how it configures extremely complex business rules.

"Customers come to us with a lot of challenging projects that they were handling manually or using spreadsheets," O'Brien explains. "Our system can be configured to deal with many complex situations, such as enrichment to orders before they're transmitted to the carriers."
This capability aligns well with Flex's overarching goal of shifting power away from carriers/providers and giving it back to its customers.

"A lot of big players control the freight, and our customers can't always aggregate their orders and optimize their businesses," says O'Brien. "We try to position ourselves to be able to help them, and our technology platform helps us do that."

For instance, if one component (such as a lithium ion battery) of a larger item is subject to "dangerous goods" regulations – and needs to be separated and shipped via a different mode – Flex has those parameters configured and automated in the MPO system. "It's seamless in that it examines the order, applies all the rules and then releases the final shipments," says O'Brien.

As Flex operates in the critical parts management arena, it works within tight timeframes that can be as slim as two to four hours. Along the way, the company is measuring every leg of the journey and anticipating potential risks for a particular order, the shipments and required services. Using MPO, the company's global teams can collaborate to ensure that those deadlines are met.

"We can share information in real-time with our customers, sites, partners, and supply base. We're using data to 'look around the corners' in the supply chain, to see what's coming next and how we can manage that," says O'Brien.

Consolidated Financial Statements, Years Ended December 31, 2022 and 2021

Kinaxis Inc.

Consolidated Financial Statements

for the years ended December 31, 2022 and 2021

(In thousands of USD)

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INDEPENDENT AUDITOR'S REPORT

To the Shareholders of Kinaxis Inc.

Opinion

We have audited the consolidated financial statements of Kinaxis Inc. (the "Entity"), which comprise:

- the consolidated statements of financial position as at December 31, 2022 and December 31, 2021
- the consolidated statements of comprehensive income (loss) for the years then ended
- the consolidated statements of changes in shareholders' equity for the years then ended
- the consolidated statements of cash flows for the years then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the Entity as at December 31, 2022 and December 31, 2021, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the ***"Auditor's Responsibilities for the Audit of the Financial Statements"*** section of our auditor's report.

We are independent of the Entity in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

KPMG LLP, an Ontario limited liability partnership and member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.
KPMG Canada provides services to KPMG LLP.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements for the year ended December 31, 2022.

These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have determined the matters described below to be the key audit matters to be communicated in our auditor's report.

Allocation of the transaction price to multiple performance obligations in contracts with customers

Description of the matter

We draw attention to Notes 2(f) and 3(b) to the financial statements. The Entity's contracts with customers often include the delivery of multiple products and services, which are generally capable of being distinct and accounted for as separate performance obligations. The accounting for a contract or contracts with a customer that contain multiple performance obligations requires the Entity to allocate the contract or contracts' transaction price to the identified distinct performance obligations. The allocation of the transaction price requires significant judgment and estimates relating to the determination of the standalone selling price ("SSP") for each distinct performance obligation. The methodology used to determine the SSP depends on the nature of the products and services and how they are priced in contracts with customers. This allocation affects the amount and timing of revenue recognized for each performance obligation.

Why the matter is the key audit matter

We identified the allocation of the transaction price to multiple performance obligations in contracts with customers as a key audit matter. There was a significant risk of material misstatement relating to the methodology used to determine the SSP for each distinct performance obligation within a contract or contracts with a customer. In addition, significant auditor judgment was required to evaluate the results of our audit procedures due to the significant judgments and estimates associated with the determination of the SSP.

How the matter was addressed in the audit

The primary procedures we performed to address this key audit matter included the following:

We evaluated the methodology used to determine the SSP by comparing it to pricing patterns in customer contracts, historical methodologies used by the Entity, and general practices in the Entity's industry.

For a selection of new customer contracts with multiple performance obligations, we examined the key terms and assessed the allocation of the transaction price to each distinct performance obligation based on its respective SSP derived from the underlying methodology.

Evaluation of the acquisition-date fair value of the intangible assets related to the MP Objects B.V. business combination

Description of the matter

We draw attention to Notes 2(f) and 4 to the financial statements. On August 15, 2022, the Entity acquired 100% of the outstanding shares of MP Objects B.V. (“MPO”) and all wholly owned subsidiaries in a business combination. The Entity paid cash consideration of $33,828 thousand and contingent consideration of 86,335 shares of the Entity that had a fair value at the date of acquisition of $9,972 thousand. The acquisition-date fair value of the customer relationships and technology (“intangible assets”) is valued at $7,600 thousand and $8,400 thousand, respectively. The Entity estimates the fair value of customer relationships and technology acquired in a business combination based on the income approach. The income approach is a valuation technique that calculates the fair value of an intangible asset based on the present value of future cash flows that the asset can be expected to generate over its remaining useful life. This valuation involves significant subjectivity and estimation uncertainty, including assumptions related to the future revenues attributable to acquired customer relationships or technology, customer attrition rates, technology migration rate, future expenses and discount rates.

Why the matter is the key audit matter

We identified the evaluation of the acquisition-date fair value of the intangible assets as a key audit matter. This matter represented an area of significant risk of material misstatement due to the magnitude of the balances and the high degree of subjectivity and estimation uncertainty in determining the fair value of intangible assets. In addition, significant auditor judgment and specialized skills and knowledge were required in evaluating the results of our audit procedures due to the sensitivity of the fair value of the intangible assets to minor changes in the significant assumptions.

How the matter was addressed in the audit

The primary procedures we performed to address this key audit matter included the following:

We evaluated the appropriateness of the future revenues and expenses, customer attrition rates, and technology migration rate assumptions by considering historical financial results, industry data, and assessing against comparable companies.

We involved valuation professionals with specialized skills and knowledge, who assisted in:

- evaluating the appropriateness of the valuation methodology used by the Entity to calculate the acquisition-date fair value of the intangible assets, and
- evaluating the Entity's discount rates by comparing against discount rate ranges that were independently developed using publicly available market and industry data.

Other Information

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions.
- the information, other than the financial statements and the auditor's report thereon, included in a document likely to be entitled "Annual Report".

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions as at the date of this auditor's report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditor's report.

We have nothing to report in this regard.

The information, other than the financial statements and the auditor's report thereon, included in a document likely to be entitled "Annual Report" is expected to be made available to us after the date of this auditor's report. If, based on the work we will perform on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact to those charged with governance.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Entity’s ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Entity’s financial reporting process.

Auditor’s Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor’s report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.

  The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor’s report to the related

disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause the Entity to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group Entity to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.
- Determine, from the matters communicated with those charged with governance, those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our auditor’s report because the adverse consequence of doing so would reasonably be expected to outweigh the public benefits of such communication.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

The engagement partner on the audit resulting in this auditor’s report is Anuj Madan.

Ottawa, Canada

March 1, 2023

Kinaxis Inc.

Consolidated Statements of Financial Position

As at December 31

(Expressed in thousands of USD)

	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 175,347	$ 203,220
Short-term investments	50,476	30,168
Trade and other receivables (note 5)	157,657	89,247
Prepaid expenses	13,660	8,502
	397,140	331,137
Non-current assets:		
Unbilled receivables (note 5)	7,245	512
Other receivables	971	1,096
Prepaid expenses	2,395	1,780
Investment tax credits recoverable (note 20)	7,591	3,616
Deferred tax assets (note 20)	1,065	6,000
Contract acquisition costs (note 6)	24,892	19,691
Property and equipment (note 7)	51,852	52,093
Right-of-use assets (note 8)	53,537	53,578
Intangible assets (note 9)	28,271	10,778
Goodwill (note 10)	73,314	39,988
	251,133	189,132
	$ 648,273	$ 520,269
Liabilities and Shareholders' Equity		
Current liabilities:		
Trade payables and accrued liabilities (note 11)	$ 40,107	$ 43,328
Deferred revenue (note 12)	133,467	99,239
Provisions (note 13)	296	716
Contingent consideration (note 4)	9,146	—
Lease obligations (note 14)	6,991	2,526
	190,007	145,809
Non-current liabilities:		
Lease obligations (note 14)	49,977	53,233
Deferred tax liabilities (note 20)	6,861	9
	56,838	53,242
Shareholders' equity:		
Share capital (note 15)	244,713	195,414
Contributed surplus	65,129	54,739
Accumulated other comprehensive loss	(156)	(597)
Retained earnings	91,742	71,662
	401,428	321,218
	$ 648,273	$ 520,269

See accompanying notes to consolidated financial statements.

On behalf of the Board of Directors:

(signed) John (Ian) Giffen Director   *(signed) Elizabeth (Betsy) Rafael* Director

Kinaxis Inc.

Consolidated Statements of Comprehensive Income (Loss)

For the years ended December 31

(Expressed in thousands of USD, except share and per share data)

		2022		2021
Revenue (note 17)	$	366,889	$	250,726
Cost of revenue		131,102		86,755
Gross profit		235,787		163,971
Operating expenses:				
Selling and marketing		79,446		59,078
Research and development		74,147		57,424
General and administrative		54,273		45,550
		207,866		162,052
		27,921		1,919
Other income (expense):				
Foreign exchange gain (loss)		1,499		(558)
Net finance and other income (expense)		1,240		(264)
Change in fair value of contingent consideration (note 4)		826		—
		3,565		(822)
Profit before income taxes		31,486		1,097
Income Tax Expense (recovery) (note 20):				
Current		3,892		3,466
Deferred		7,514		(1,204)
		11,406		2,262
Profit (loss)		20,080		(1,165)
Other comprehensive income (loss):				
Items that are or may be reclassified subsequently to profit:				
Foreign currency translation differences - foreign operations		441		(577)
Total comprehensive income (loss)	$	20,521	$	(1,742)
Basic earnings (loss) per share	$	0.73	$	(0.04)
Weighted average number of basic Common Shares (note 16)		27,667,100		27,248,193
Diluted earnings (loss) per share	$	0.70	$	(0.04)
Weighted average number of diluted Common Shares (note 16)		28,609,603		27,248,193

See accompanying notes to consolidated financial statements.

Kinaxis Inc.

Consolidated Statements of Changes in Shareholders' Equity

For the years ended December 31
(Expressed in thousands of USD)

	Share capital	Contributed surplus	Accumulated other comprehensive loss	Retained earnings	Total equity
Balance, December 31, 2020	$ 173,104	$ 35,846	$ (20)	$ 72,827	$ 281,757
Loss	—	—	—	(1,165)	(1,165)
Other comprehensive loss	—	—	(577)	—	(577)
Total comprehensive loss	—	—	(577)	(1,165)	(1,742)
Share options exercised	14,221	(3,459)	—	—	10,762
Restricted share units vested	8,089	(8,089)	—	—	—
Share based payments	—	30,441	—	—	30,441
Total shareholder transactions	22,310	18,893	—	—	41,203
Balance, December 31, 2021	195,414	54,739	(597)	71,662	321,218
Profit	—	—	—	20,080	20,080
Other comprehensive income	—	—	441	—	441
Total comprehensive income	—	—	441	20,080	20,521
Share options exercised	38,791	(9,076)	—	—	29,715
Restricted share units vested	10,091	(10,091)	—	—	—
Performance share units vested	417	(417)	—	—	—
Share based payments	—	29,974	—	—	29,974
Total shareholder transactions	49,299	10,390	—	—	59,689
Balance, December 31, 2022	$ 244,713	$ 65,129	$ (156)	$ 91,742	$ 401,428

See accompanying notes to consolidated financial statements.

Kinaxis Inc.

Consolidated Statements of Cash Flows

For the years ended December 31
(Expressed in thousands of USD)

	2022	2021
Cash flows from operating activities:		
Profit (loss)	$ 20,080	$ (1,165)
Items not affecting cash:		
Depreciation of property and equipment and right-of-use assets (note 19)	21,496	18,164
Amortization of intangible assets (note 19)	3,564	2,245
Share-based payments (note 15)	26,238	24,343
Net finance expense (income)	(1,013)	634
Change in fair value of contingent consideration (note 4)	(826)	—
Income tax expense (note 20)	11,406	2,262
Investment tax credits recoverable (note 20)	(3,975)	(1,527)
Change in operating assets and liabilities (note 21)	(49,123)	5,523
Interest received	2,546	428
Interest paid	(1,841)	(1,050)
Income taxes received (paid)	(4,034)	281
	24,518	50,138
Cash flows used in investing activities:		
Acquisition of business, net of cash acquired (note 4)	(36,738)	(800)
Purchase of property and equipment and intangible assets (note 7 and 9)	(18,249)	(33,833)
Purchase of short-term investments	(80,314)	(71,599)
Redemption of short-term investments	60,314	71,599
	(74,987)	(34,633)
Cash flows from financing activities:		
Payment of lease obligations (note 14)	(6,733)	(4,911)
Lease incentive received (note 14)	3,858	—
Proceeds from exercise of stock options	29,715	10,762
	26,840	5,851
Increase (decrease) in cash and cash equivalents	(23,629)	21,356
Cash and cash equivalents, beginning of year	203,220	182,958
Effects of exchange rates on cash and cash equivalents	(4,244)	(1,094)
Cash and cash equivalents, end of year	$ 175,347	$ 203,220

See accompanying notes to consolidated financial statements.

1. Corporate information:

Kinaxis Inc. (“Kinaxis” or the "Company") is incorporated under the Canada Business Corporations Act and domiciled in Ontario, Canada. The address of the Company’s registered office is 3199 Palladium Drive, Ottawa, Ontario. The consolidated financial statements of the Company as at and for the years ended December 31, 2022 and 2021 comprise the Company and its subsidiaries.

Kinaxis is a leading provider of cloud-based subscription software that enables its customers to improve and accelerate analysis and decision-making across their supply chain operations. Kinaxis is a global enterprise with registered offices in the United States, Japan, Hong Kong, The Netherlands, South Korea, United Kingdom, Romania Singapore, France, Ireland, Germany, India, and Canada.

2. Basis of preparation:

(a) Statement of compliance:

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”), and includes the accounts of Kinaxis Inc. and its wholly-owned subsidiaries, outlined in note 25.

The consolidated financial statements were authorized for issue by the Board of Directors on March 1, 2023.

(b) Comparative figures:

Certain comparative figures have been adjusted for the year ended December 31, 2021. Prepaid expenses previously reported as current assets have been classified as non-current assets. This adjustment was not considered material and did not affect the Company’s consolidated revenue or consolidated profit.

(c) Measurement basis:

The consolidated financial statements have been prepared on the historical cost basis except for certain financial instruments measured at fair value. Historical cost is generally based on the fair value of the consideration given in exchange for assets.

(d) Presentation currency:

These consolidated financial statements are presented in United States dollars (“USD”) which is the functional currency of the Company and its subsidiaries unless otherwise stated. Amounts are presented in thousands of USD.

(e) Foreign currency:

Foreign currency transactions
The financial statements of the Company are measured using USD as the functional currency. The functional currency of the Company’s significant wholly-owned subsidiaries is outlined in note 25. Transactions in currencies other than the functional currency are translated at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are translated to USD at the rates prevailing at that date. Exchange differences on monetary items are recognized in profit or loss in the period in which they arise. Non-monetary items carried at fair value that are denominated in

2. Basis of preparation (continued):

(e) Foreign currency (continued):

foreign currencies are translated to the functional currency at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the rates at the date of the transaction.

Foreign operations

The consolidated financial statements include the accounts of the Company's wholly-owned subsidiaries. Assets and liabilities have been translated into USD using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuate significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in shareholders' equity.

(f) Use of estimates and judgments:

The preparation of the consolidated financial statements in accordance with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, revenue, expenses and disclosure of contingent assets and liabilities. Actual results may differ from these estimates.

Estimates and judgments include, but are not limited to, allocation of the transaction price to multiple performance obligations in contracts with customers, revenue recognition on fixed price professional services contracts, recognition of deferred tax assets, valuation of trade and other receivables, valuation of share-based payments, valuation of contingent consideration, and valuation of acquired intangible assets. Estimates and assumptions are reviewed periodically and the effects of revisions are recorded in the consolidated financial statements in the period in which the estimates are revised and in any future periods affected.

Allocation of the transaction price to multiple performance obligations in contracts with customers

Contracts with customers often include promises to deliver multiple products and services. Determining whether such bundled products and services are considered i) distinct performance obligations that should be separately recognized, or ii) non-distinct and therefore should be combined with another good or service and recognized as a combined unit of accounting may require judgment. In general, the Company's professional services are capable of being distinct as they could be performed by third party service providers and do not involve significant customization of the licensed software.

The allocation of the transaction price requires significant judgment and estimates relating to the determination of the standalone selling price ("SSP") for each distinct performance obligation. The methodology used to determine the SSP depends on the nature of the products and services and how they are priced in contracts with customers. This allocation affects the amount and timing of revenue recognized for each performance obligation. In order to determine the SSP of promised products or services, the Company conducts a regular analysis to determine whether various products or services have an observable SSP. If the Company does not have an observable SSP for a particular product or service, then SSP for that particular good or service is estimated using reasonably available information and maximizing observable inputs with approaches including historical pricing, cost plus a margin, adjusted market assessment, and the residual approach. The Company uses a range of amounts to estimate SSP when it sells each of the products and services separately and needs to determine whether there is a discount that needs to be allocated based on the relative SSP of the various products and services. In general, SSP for maintenance and support bundled in on-premise and hybrid subscription arrangements is established as a percentage of the subscription license fee as supported by third party evidence and internal analysis of similar vendor contracts. SSP for hosting and professional services is

2. Basis of preparation (continued):

(f) Use of estimates and judgments (continued):

established based on observable prices for the same or similar services when sold separately, or estimated using a cost plus margin approach.

Revenue recognition on fixed price contracts

For professional services contracts billed on a fixed price basis, revenue is recognized over time based on the proportion of services performed. The Company determines this based on the actual labour hours incurred relative to the total forecasted hours. This requires the Company to estimate the labour hours required to complete the contract at the reporting date, the uncertainty inherent in which will not be resolved until the contract is completed.

Recognition of deferred tax assets

The recognition of deferred tax assets requires the Company to assess future taxable income available to utilize deferred tax assets related to deductible temporary differences. The Company considers the nature and carry-forward period of deferred tax assets, the Company's recent earnings history and forecast of future earnings in performing this assessment. The actual deferred tax assets realized may differ from the amount recorded due to factors having a negative impact on operating results of the Company and lower future taxable income.

Valuation of trade and other receivables

The recognition of trade and other receivables and loss allowances requires the Company to assess credit risk and collectability. The Company considers historical trends and any available information indicating a customer could be experiencing liquidity or going concern problems and the status of any contractual or legal disputes with customers in performing this assessment.

Valuation of share-based payments

The Company uses the Black-Scholes valuation model to determine the fair value of equity settled stock options and the Monte Carlo valuation model to determine the fair value of performance share units. Estimates are required for inputs to these models, including the expected life of the option, volatility, forfeiture rate, expected dividend yield and the risk free interest rate. Variation in actual results for any of these inputs will result in a different value of the stock option or performance share unit realized from the original estimate. The assumptions and estimates used are further outlined in note 15.

Valuation of contingent consideration

The Company measures the contingent consideration payable in a business combination at the estimated fair value at each reporting date. The fair value is estimated based on the range of possible outcomes and the Company's assessment of the likelihood of each outcome.

Valuation of acquired intangible assets

The Company estimates the fair value of customer relationships and technology acquired in a business combination based on the income approach. The income approach is a valuation technique that calculates the fair value of an intangible asset based on the present value of future cash flows that the asset can be expected to generate over its remaining useful life. This valuation involves significant subjectivity and estimation uncertainty, including assumptions related to the future revenues attributable to acquired customer relationships or technology, customer attrition rates, technology migration rate, future expenses, and discount rates.

3. Significant Accounting Policies:

a) Basis of consolidation:

Subsidiaries are entities controlled by the Company. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The accounting policies of subsidiaries have been changed when necessary to align them with the policies adopted by the Company. All intercompany transactions, balances, revenues and expenses between the Company and its subsidiaries have been eliminated.

(b) Revenue recognition:

Revenue is recognized upon transfer of control of products or services to customers at an amount that reflects the transaction price the Company expects to receive in exchange for the products or services. The Company's contracts with customers often include the delivery of multiple products and services, which are generally capable of being distinct and accounted for as separate performance obligations. The accounting for a contract or contracts with a customer that contain multiple performance obligations requires the Company to allocate the contract or contracts' transaction price to the identified distinct performance obligations.

The Company's hosted software-as-a-service ("SaaS") application, which allows customers to use hosted software over the contract period without taking possession of the software, is provided on a subscription basis, with revenue primarily recognized ratably over the contract period, commencing on the date an executed contract exists and the customer has the right-to-use and access to the platform. For certain contracts, a component of consideration is recognized on a unit basis in accordance with transaction volume.

On-premise, fixed term subscription licenses and hybrid software subscriptions (where the customer has the option to take the hosted software on-premise) provide the customer with a right-to-use the software as it exists when made available to the customer. Revenue from distinct on-premise subscription licenses is recognized upfront at the point in time when the software is made available to the customer and the right to use the software has commenced. On-premise subscription licenses and hybrid subscriptions are bundled with software maintenance and support services and/or hosting over the term. The license component and maintenance and support/hosting components are each allocated revenue using their relative estimated SSP. Revenue allocated to the bundled maintenance and support and hosting is recognized ratably over the term of the maintenance and support services. Professional services are provided for implementation and configuration of software licenses and SaaS, as well as ongoing technical services and training.

Professional services are typically billed on a time and material basis and revenue is recognized over time as the services are performed. For professional services contracts billed on a fixed price basis, revenue is recognized over time based on the proportion of services performed.

Maintenance and support services provided to customers on legacy perpetual software licenses is recognized ratably over the term of the maintenance and support services.

The Company recognizes an asset for the incremental costs of obtaining a contract with a customer if it expects the costs to be recoverable, and has determined that certain sales incentive programs meet the requirements to be capitalized. Capitalized contract acquisition costs are amortized consistent with the pattern of transfer to the customer for the goods and services to which the asset relates. The amortization period includes specifically identifiable contract renewals where there is no substantive renewal commission. The expected customer

3. Significant Accounting Policies (continued):

(b) Revenue recognition (continued):

renewal period is estimated based on the historical life of our customers, which the Company has determined to be six years. The Company applies the practical expedient available under IFRS 15 and does not capitalize incremental costs of obtaining contracts if the amortization period is one year or less.

The timing of revenue recognition often differs from contract payment schedules, resulting in revenue that has been earned but not billed. These amounts are included in unbilled receivables. Amounts billed in accordance with customer contracts, but not yet earned, are recorded and presented as part of deferred revenue.

The Company has elected to apply the practical expedient to not adjust the total consideration over the contract term for the effect of a financing component if the period between the transfer of services to the customer and the customer's payment for these services is expected to be one year or less.

(c) Financial instruments:

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument.

Trade receivables without a significant financing component are initially measured at the transaction price. All other financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss ("FVTPL")) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial assets

All financial assets are recognized and de-recognized on trade date.

The Company determines the classification of its financial assets on the basis of both the business model for managing the financial assets and the contractual cash flow characteristics of the financial asset. Financial assets are not reclassified subsequent to their initial recognition unless the Company changes its business model for managing financial assets.

A financial asset is measured at amortized cost if it is held within a business model whose objective is to hold assets to collect contractual cash flows, and its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The Company's financial assets are classified as follows:

Financial asset	Classification under IFRS 9
Cash and cash equivalents	Amortized cost
Short-term investments	Amortized cost
Trade and other receivables	Amortized cost
Unbilled receivables	Amortized cost

Amortized cost

Subsequent to initial recognition, financial assets at amortized cost are measured using the effective interest method, less any impairment. Interest income is recognized by applying the effective interest rate except for short-term receivables where the interest revenue would be immaterial. Interest income, foreign exchange gains and losses, impairment, and any gain or loss on de-recognition are recognized in profit or loss.

3. Significant Accounting Policies (continued):

(c) Financial instruments (continued):

Impairment of financial assets

The Company measures a loss allowance based on the lifetime expected credit losses. Lifetime expected credit losses are estimated based on factors such as the Company's past experience of collecting payments, the number of delayed payments in the portfolio past the average credit period, observable changes in national or local economic conditions that correlate with default on receivables, financial difficulty of the borrower, and it becoming probable that the borrower will enter bankruptcy or financial re-organization.

Financial assets are written off when there is no reasonable expectation of recovery.

Financial liabilities

The Company determines the classification of its financial liabilities at initial recognition. The Company's financial liabilities are classified as follows:

Financial liability	Classification under IFRS 9
Trade payables and accrued liabilities	Amortized cost
Contingent consideration	FVTPL

Amortized cost

Financial liabilities at amortized cost are measured using the effective interest rate method.

De-recognition of financial liabilities

The Company de-recognizes financial liabilities when the Company's obligations are discharged, cancelled or they expire.

(d) Cash and cash equivalents:

Cash and cash equivalents include cash investments in interest-bearing accounts and term deposits which can readily be redeemed for cash without penalty or are issued for terms of three months or less from the date of acquisition.

(e) Short-term investments:

Short-term investments consist of term deposits and guaranteed income certificates held with Schedule 1 Canadian banks for maturity terms of three to six months from the date of acquisition. Investments are measured at amortized cost. The carrying amount of these investments approximates fair value due to the short-term maturity of these instruments.

(f) Property and equipment:

Property and equipment are measured at cost less accumulated depreciation and accumulated impairment losses. Cost includes expenditures that are directly attributable to the acquisition of the asset. The assets are depreciated over their estimated useful lives using the straight-line method as this most closely reflects the expected pattern of consumption of the future economic benefits. Depreciation methods, useful lives and residual values are reviewed at each financial year end and adjusted prospectively, if appropriate.

3. Significant Accounting Policies (continued):

(f) Property and equipment (continued):

Property and Equipment	Rate
Computer equipment	3 to 5 years
Computer software	3 to 5 years
Office furniture and equipment	3 to 5 years
Leasehold improvements	Shorter of useful life or remaining term of lease

At the end of each reporting period, the Company reviews the carrying amounts of its property and equipment to determine whether there is any indication of impairment. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). The recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or groups of assets (the “cash-generating unit”, or “CGU”).

If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

(g) Leases:

At inception of a contract, the Company assesses whether a contract is, or contains, a lease based on whether the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Company has elected to apply the practical expedient to account for each lease component and any non-lease components as a single lease component.

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured based on the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received. The right-of-use assets are depreciated to the earlier of the end of the useful life of the right-of- use asset or the lease term using the straight-line method as this most closely reflects the expected pattern of consumption of the future economic benefits. The lease term includes periods covered by an option to extend if the Company is reasonably certain to exercise that option. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company’s incremental borrowing rate. Generally, the Company uses its incremental borrowing rate as the discount rate. Variable lease payments that do not depend on an index or rate are not included in the measurement of the lease liability.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the

3. Significant Accounting Policies (continued):

(g) Leases (continued):

Company's estimate of the amount expected to be payable under a residual value guarantee, or if the Company changes its assessment of whether it will exercise a purchase, extension or termination option.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

The Company has elected to apply the practical expedient not to recognize right-of-use assets and lease liabilities for short-term leases that have a lease term of 12 months or less and leases of low-value assets. The lease payments associated with these leases are recognized as an expense on a straight-line basis over the lease term.

(h) Employee benefits:

The Company offers a defined contribution plan to its employees which is a post-employment benefit plan under which an entity pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognized as an employee benefit expense in profit or loss in the periods during which services are rendered by employees.

(i) Provisions:

A provision is recognized if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognized as finance cost.

A provision for onerous contracts is recognized when the expected benefits to be derived by the Company from a contract are lower than the unavoidable cost of meeting its obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Company recognizes any impairment loss on the assets associated with that contract.

(j) Research and development expense:

Expenditures on research activities is recognized in profit or loss as incurred. Development costs for internally developed software, are recorded as an intangible asset if the criteria for capitalization is met. Expenditures relating to preliminary or post implementation project activities for internally developed software are expensed as incurred. Internally developed software recorded as an intangible asset will be amortized on a straight-line basis over the length of its useful life, which is typically three to five years.

(k) Government assistance:

Government assistance is recognized when there is reasonable assurance that it will be received and that compliance with all related conditions has been achieved. When the government assistance relates to an expense item, it is recognized as a reduction of the related expense to match the government assistance on a systematic basis to the costs that it is intended to subsidize.

No government grants were received in 2022. During 2021, the Company received $7,906 of non-refundable government grants relating to the COVID-19 pandemic. The grants are offset against cost of revenue and operating expenses.

3. Significant Accounting Policies (continued):

(l) Income taxes:

Current and deferred income taxes are recognized as an expense or recovery in profit or loss, except when they relate to items that are recognized outside profit or loss (whether in other comprehensive income or directly in equity), in which case the tax is also recognized outside of profit or loss.

Current income tax

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from, or paid to, the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, by the reporting date, in the countries where the Company operates and generates taxable income.

Deferred income tax

Deferred income tax assets and liabilities are recorded for the temporary differences between transactions that have been included in the consolidated financial statements or income tax returns. Deferred income taxes are provided for using the liability method. Under the liability method, deferred income taxes are recognized for all significant temporary differences between the tax and financial statement bases of assets and liabilities and for certain carry-forward items. Deferred income tax assets are recognized only to the extent that, in the opinion of management, it is probable that the deferred income tax assets will be realized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date. Deferred income tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of the enactment or substantive enactment. Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when they relate to income taxes levied by the same taxation authority and the Company intends to settle its current tax assets and liabilities on a net basis.

Uncertain tax positions

The Company periodically evaluates the positions taken in its tax returns with respect to situations in which applicable tax rules may be subject to interpretations. The Company establishes provisions related to tax uncertainties where appropriate, based on an estimate of the amount that ultimately will be paid to the tax authorities.

Investment tax credits

Investment tax credits relating to scientific research and experimental development expenditures are recorded in the fiscal period the qualifying expenditures are incurred based on management's interpretation of applicable legislation in the Income Tax Act of Canada. Credits are recorded provided there is reasonable assurance that the tax credit will be realized. Credits claimed are subject to review by the Canada Revenue Agency.

Credits claimed in connection with research and development activities are accounted for using the cost reduction method. Under this method, assistance and credits relating to the acquisition of equipment is deducted from the cost of the related assets, and those relating to current expenditures, which are primarily salaries and related benefits, are included in the determination of profit or loss as a reduction of the related research and development expenses.

(m) Share-based payments:

The Company uses the fair value based method to measure share-based compensation for all share-based awards made to employees and directors. The grant date fair value of equity-settled share-based payment awards granted to employees is generally recognized as an expense, with a corresponding increase in equity,

3. Significant Accounting Policies (continued):

(m) Share-based payments (continued):

over the vesting period of the awards. The grant date fair value is determined using the Black-Scholes model for option grants and the Monte Carlo model for performance share unit grants. The market value of the Company's shares on the date of the grant is used to determine the fair value of restricted and deferred share units issued. Each tranche of an award is considered a separate award with its own vesting period and grant date fair value. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognized is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting (i.e. performance) conditions, the grant date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

Where the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified and if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

(n) Earnings per share:

Basic earnings per share is calculated by dividing profit or loss by the weighted average number of common shares outstanding during the reporting period. Diluted earnings per share is calculated similar to basic earnings per share except the weighted average number of common shares outstanding is adjusted for the effects of all dilutive potential common shares, which are comprised of additional shares from the assumed exercise of stock options or vesting of share units. Options and share units that have a dilutive impact are assumed to have been exercised or vested on the later of the beginning of the period or the date granted.

(o) Business combinations:

The Company accounts for business combinations using the acquisition method. Goodwill arising on acquisitions is measured as the fair value of the consideration transferred less the net recognized amount of the estimated fair value of identifiable assets acquired and liabilities assumed, all measured as of the acquisition date. Transaction costs that the Company incurs in connection with a business combination are expensed as incurred.

The Company uses its best estimates and assumptions to reasonably value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, and these estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with a corresponding offset to goodwill. Upon conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded in profit or loss.

(p) Acquired intangible assets:

The Company's intangible assets consist of customer relationships and technology acquired in a business combination. These intangible assets are recorded at their fair value at the acquisition date. The Company uses the income approach to value acquired technology and customer relationships intangible assets, which are the two material intangible asset categories reported in the financial statements.

3. Significant Accounting Policies (continued):

(p) Acquired intangible assets (continued):

The income approach is a valuation technique that calculates the fair value of an intangible asset based on the present value of future cash flows that the asset can be expected to generate over its remaining useful life. The discounted cash flow ("DCF") is the methodology used, which is a form of the income approach that begins with a forecast of the annual cash flows a market participant would expect the subject intangible asset to generate over a discrete projection period. The future cash flows for each of the years in the discrete projection period are then converted to their present value equivalent using a rate of return appropriate for the risk of achieving the intangible assets' projected cash flows, again, from a market participant perspective. The present value of the future cash flows are then added to the present value of the residual value of the intangible asset (if any) at the end of the discrete projection period to arrive at a conclusion with respect to the estimated fair value of the subject intangible asset. After initial recognition, intangible assets are measured at cost less any accumulated amortization and impairment losses.

Intangible assets with finite useful lives are amortized on a straight-line basis over their estimated useful lives. The estimated useful life for customer relationships is three to nine years and the useful life for technology is four to seven years. Amortization methods, useful lives and residual values are reviewed at each financial year end and adjusted prospectively if appropriate.

Intangible assets with finite useful lives are tested for impairment whenever there is an indication that the asset may be impaired. An impairment loss is recognized if the recoverable amount of the asset is less than the carrying amount. The recoverable amount is the higher of fair value less costs to sell and value in use.

(q) Goodwill:

Goodwill arises from a business combination as the excess of the consideration transferred over the identifiable net assets acquired. After initial recognition, goodwill is measured at cost less any accumulated impairment losses.

For the purpose of impairment testing, goodwill is allocated to the cash-generating unit that is expected to benefit from the related business combination. The Company as a whole has been assessed as a single CGU. The CGU is tested for impairment annually on December 31 and whenever there is an indication that the CGU may be impaired. The impairment testing methodology is based on a comparison between the recoverable amount (higher of fair value less costs to sell and value-in-use of the CGU) and the net asset carrying value (including goodwill). If the recoverable amount of the CGU is less than the carrying amount of the CGU, the impairment loss is first allocated to reduce the carrying amount of any goodwill allocated to the CGU and then to the other assets of the CGU. An impairment loss is recognized immediately in profit or loss. Any impairment loss in respect of goodwill is not reversed.

4. Business combinations:

On February 11, 2022, the Company acquired 100% of the outstanding shares of a supply chain solutions company in exchange for cash. The acquired company is a provider of algorithm-driven supply chain planning software modules. The operating results of the acquired company have been consolidated into the Company's results subsequent to the acquisition date. The Company incurred acquisition-related costs of $199 which have been recorded in general and administrative expense.

The purchase price consists of cash consideration of $3,144, adjusted for the acquired company's closing cash at the date of acquisition and subject to post-closing working capital adjustments, resulting in total consideration of $3,084.

The following table presents the purchase price allocation at the acquisition date:

Assets acquired and liabilities assumed:		
Cash and cash equivalents	$	65
Trade and other receivables		423
Right-of-use assets		82
Intangible assets:		
Technology		550
Customer relationships		350
Trade payables and accrued liabilities		(82)
Deferred revenue		(407)
Lease obligation		(82)
Deferred tax liability		(239)
		660
Goodwill		2,424
Total consideration	$	3,084

The trade and other receivables included gross contractual amounts of $381, all of which has been fully collected.

The goodwill is primarily attributable to the expected synergies that will result from the value of integrating the acquired company's intellectual property to the Company's future product direction, and the relevant industry and technical knowledge of the assembled workforce. The goodwill is not deductible for tax purposes.

Since the date of acquisition, the acquisition has not had a significant impact on revenue and net earnings for the year ended December 31, 2022. Pro forma results of operations for this acquisition have not been presented because they are not material to our consolidated results of operations.

4. Business combinations (continued):

On August 15, 2022, the Company acquired 100% of the outstanding shares of MP Objects B.V. ("MPO") and all wholly owned subsidiaries. MPO offers a natively unified cloud platform for Multi-Party Orchestration, which optimizes order, inventory, and transportation across dynamic, multi-party networks. The Company incurred acquisition-related costs of $1,688 which have been recorded in general and administrative expense.

The purchase price consists of cash consideration of $33,828 and contingent consideration of 86,335 shares of the Company that had a fair value at the date of acquisition of $9,972. This fair value was remeasured to $9,146 at December 31, 2022. The contingent consideration will be paid to the selling shareholders upon the delivery of specific contracted backlog within the first six and twelve month intervals or upon achieving an agreed trailing twelve month revenue target. The consideration was adjusted for the acquired company's closing cash at the date of acquisition and post-closing working capital adjustments, resulting in total consideration of $44,731.

The following table presents the purchase price allocation at the acquisition date:

Assets acquired and liabilities assumed:		
Cash and cash equivalents	$	1,040
Trade and other receivables		1,753
Prepaid expenses		230
Contract acquisition costs		195
Property and equipment		95
Right-of-use assets		1,470
Intangible assets:		
Technology		8,400
Customer relationships		7,600
Trade payables and accrued liabilities		(1,008)
Deferred revenue		(531)
Lease obligations		(1,470)
Deferred tax liability		(2,875)
		14,899
Goodwill		29,832
Total consideration	$	44,731

The trade and other receivables include gross contractual amounts of $986, of which $696 has been fully collected. Accounts receivable are discussed further in note 5.

The goodwill is primarily attributable to the expected synergies that will result from the value of integrating the acquired company's intellectual property to the Company's future product direction, and the relevant industry and technical knowledge of the assembled workforce. The goodwill is not deductible for tax purposes.

Since the date of acquisition, the acquisition has not had a significant impact on revenue and net earnings for the year ended December 31, 2022. Pro forma results of operations for this acquisition have not been presented because they are not material to our consolidated results of operations.

5. Trade and other receivables:

	2022	2021
Trade accounts receivable	$ 121,669	$ 71,118
Unbilled receivables	30,623	15,413
Taxes receivable	1,830	217
Other	3,847	2,499
	157,969	89,247
Loss allowance	(312)	—
	$ 157,657	$ 89,247

There were no trade accounts receivable written off in 2022 (2021 – $nil).

The following table presents changes in unbilled receivables:

	2022	2021
Balance, beginning of year	$ 15,925	$ 15,813
Amounts transferred to trade accounts receivable	(10,353)	$ (13,752)
Amounts written off	—	(288)
Revenue in excess of billings	32,296	14,152
Balance, end of year	$ 37,868	$ 15,925

The following table presents current and non-current unbilled receivables:

	2022	2021
Current	$ 30,623	$ 15,413
Non-current	7,245	512

6. Contract acquisition costs:

	2022	2021
Balance, beginning of year	$ 19,691	$ 16,484
Additions	13,232	9,713
Amortization	(7,439)	(6,359)
Effects of movements in exchange rates	(592)	(147)
Balance, end of year	$ 24,892	$ 19,691

Amortization of contract acquisition costs is recorded in selling and marketing expense.

7. Property and equipment:

Cost	December 31, 2021	Additions	Dispositions	Effects of exchange rates	December 31, 2022
Land	$ 18	$ —	$ —	$ —	$ 18
Computer equipment	67,920	9,073	(10,552)	(1,023)	65,418
Computer software	3,735	861	(505)	(25)	4,066
Office furniture and equipment	3,731	906	(83)	(33)	4,521
Leasehold improvements	23,657	4,109	(2,935)	(266)	24,565
Total cost	$ 99,061	$ 14,949	$ (14,075)	$ (1,347)	$ 98,588

Accumulated depreciation	December 31, 2021	Depreciation	Dispositions	Effects of exchange rates	December 31, 2022
Computer equipment	$ 38,411	$ 10,556	$ (10,549)	$ (595)	$ 37,823
Computer software	2,954	658	(505)	(25)	3,082
Office furniture and equipment	900	1,271	(83)	38	2,126
Leasehold improvements	4,703	2,004	(2,911)	(91)	3,705
Total accumulated depreciation	$ 46,968	$ 14,489	$ (14,048)	$ (673)	$ 46,736

7. Property and equipment (continued):

Cost	December 31, 2020	Additions	Dispositions	Effects of exchange rates	December 31, 2021
Land	$ 18	$ —	$ —	$ —	$ 18
Computer equipment	54,187	14,881	—	(1,148)	67,920
Computer software	3,234	529	—	(28)	3,735
Office furniture and equipment	1,154	2,603	—	(26)	3,731
Leasehold improvements	8,476	15,820	(450)	(189)	23,657
Total cost	$ 67,069	$ 33,833	$ (450)	$ (1,391)	$ 99,061

Accumulated depreciation	December 31, 2020	Depreciation	Dispositions	Effects of exchange rates	December 31, 2021
Computer equipment	$ 29,340	$ 9,601	$ —	$ (530)	$ 38,411
Computer software	2,317	659	—	(22)	2,954
Office furniture and equipment	567	339	—	(6)	900
Leasehold improvements	4,099	1,153	(450)	(99)	4,703
Total accumulated depreciation	$ 36,323	$ 11,752	$ (450)	$ (657)	$ 46,968

Carrying value	December 31, 2022	December 31, 2021
Land	$ 18	$ 18
Computer equipment	27,595	29,509
Computer software	984	781
Office furniture and equipment	2,395	2,831
Leasehold improvements	20,860	18,954
Total property and equipment	$ 51,852	$ 52,093

There were no proceeds associated with asset dispositions in 2022 (2021 – $nil). Additions in 2022 include $95 (2021 – $nil) of property and equipment acquired through business combinations, as outlined in note 4.

8. Right-of-use assets:

	December 31, 2021	Additions	Depreciation	Effects of exchange rates	December 31, 2022
Offices	$ 45,236	$ 7,281	$ (3,876)	$ (618)	$ 48,023
Data centres	8,342	547	(3,131)	(244)	5,514
Total right-of-use assets	$ 53,578	$ 7,828	$ (7,007)	$ (862)	$ 53,537

	December 31, 2020	Additions	Depreciation	Effects of exchange rates	December 31, 2021
Offices	$ 7,317	$ 41,795	$ (3,581)	$ (295)	$ 45,236
Data centres	8,405	3,096	(2,831)	(328)	8,342
Total right-of-use assets	$ 15,722	$ 44,891	$ (6,412)	$ (623)	$ 53,578

Additions in 2022 include $1,552 (2021 – $nil) of right-of-use assets acquired through business combinations, as outlined in note 4. During 2021, the Company recorded additions of $41,552 for new leased office space in Ottawa, Canada.

9. Intangible assets:

The estimated useful life of customer relationships is three to nine years and the estimated useful life of technology is four to seven years.

	December 31, 2021	Additions	Amortization	Effect of exchange rates	December 31, 2022
Customer relationships	$ 2,370	$ 7,950	$ (1,186)	$ 334	$ 9,468
Technology	8,408	8,950	(2,245)	428	15,541
Internally developed software	—	3,395	(133)	—	3,262
Total intangible assets	$ 10,778	$ 20,295	$ (3,564)	$ 762	$ 28,271

	December 31, 2020	Additions	Amortization	Effect of exchange rates	December 31, 2021
Customer relationships	$ 3,087	$ —	$ (717)	$ —	$ 2,370
Technology	9,936	—	(1,528)	—	8,408
Total intangible assets	$ 13,023	$ —	$ (2,245)	$ —	$ 10,778

9. Intangible assets (continued):

In 2022, the Company began developing software to be used internally to support its strategy in utilizing the public cloud to deliver its SaaS product. The qualifying internal and external development costs associated with this software asset have been capitalized as an intangible asset and consist primarily of consultant fees and compensation costs of internal staff performing the development activity. The amortization period for the intangible asset began once the asset became available for use. It is amortized on a straight-line basis over its useful life which has been determined to be five years.

10. Goodwill:

	2022	2021
Balance, beginning of year	$ 39,988	$ 39,988
Acquisitions (note 4)	32,256	—
Effect of foreign exchange	1,070	—
Balance, end of year	$ 73,314	$ 39,988

The annual impairment test of goodwill was performed as of December 31, 2022 and did not result in an impairment loss.

11. Trade payables and accrued liabilities:

	2022	2021
Trade accounts payable	$ 10,403	$ 10,584
Accrued liabilities	27,024	26,299
Taxes payable	2,680	6,445
	$ 40,107	$ 43,328

12. Deferred revenue:

	2022	2021
Balance, beginning of year	$ 99,239	$ 94,275
Deferred revenue from acquisition (note 4)	938	—
Recognition of deferred revenue	(101,118)	(91,157)
Amounts invoiced and revenue deferred	134,408	96,121
Balance, end of year	$ 133,467	$ 99,239

13. Provisions:

In 2021, the Company recorded a provision of $716 for the estimated future variable lease payments for office space which the Company has ceased using. These costs have been recorded in general and administrative expense. The remaining provision as of December 31, 2022 is $296.

14. Lease obligations:

The Company's leases are for office space and data centres with lease terms ranging from two to twenty years. These leases contain no renewal options or a renewal option for one, two or five years. The Company has included renewal options in the lease term when it is reasonably certain to exercise the renewal option.

	2022	2021
Current	$ 6,991	$ 2,526
Non-current	49,977	53,233
Total lease obligations	$ 56,968	$ 55,759

The following table presents the contractual undiscounted cash flows for lease obligations as at December 31, 2022:

Less than one year	$ 8,614
One to five years	18,369
More than five years	43,400
Total undiscounted lease obligations	$ 70,383

The following table presents payments for lease obligations:

	2022	2021
Principal payments	$ 6,733	$ 4,911
Interest payments	1,841	1,050
Variable lease payments	1,775	1,624
Short-term lease payments	513	480
Total cash outflow for leases	10,862	8,065
Lease incentives received	(3,858)	—
Net cash outflow for leases	$ 7,004	$ 8,065

15. Share capital:

Authorized

The Company is authorized to issue an unlimited number of Common Shares.

Issued Common Shares

	2022			2021		
	Shares		Amount	Shares		Amount
Shares outstanding, beginning of year	27,462,834	$	195,414	27,085,922	$	173,104
Shares issued from exercised options	492,631		38,791	291,680		14,221
Shares issued from vested RSUs	93,388		10,091	85,232		8,089
Shares issued from vested PSUs	3,776		417	—		—
Shares outstanding, end of year	28,052,629	$	244,713	27,462,834	$	195,414

Stock option plans

The Company has outstanding stock options issued under its 2012 Stock Option Plan. No further options may be granted under the 2012 plan. In June 2017, the Company adopted a new Canadian Resident Stock Option Plan and a new Non-Canadian Resident Stock Option Plan (“the Plans”). Stock options granted under the Plans have an exercise price equal to the stock’s TSX price at the date of grant and the maximum term of these options is five years. Options are granted periodically and typically vest over four years.

In June 2021, Kinaxis shareholders voted to approve an amendment to the Plans to increase the maximum number of shares reserved for issue by 500,000. At December 31, 2022, there were 715,727 stock options available for grant under the Plans.

The following table presents changes in stock options outstanding:

	2022			2021		
	Shares		Weighted average exercise price	Shares		Weighted average exercise price
Options outstanding, beginning of year	2,143,375	$	76.56	2,228,456	$	68.82
Granted	194,646		125.04	275,973		108.61
Exercised	(492,631)		60.32	(291,680)		36.89
Forfeited	(125,064)		149.26	(69,374)		126.21
Options outstanding, end of year	1,720,326	$	75.53	2,143,375	$	76.56
Options exercisable, end of year	1,028,146	$	59.91	1,150,389	$	58.44

15. Share capital (continued):

The following table presents information about stock options outstanding at December 31, 2022:

	Options outstanding			Options exercisable	
Range of exercise prices	Number outstanding	Weighted average remaining contractual life	Weighted average exercise price	Number exercisable	Weighted average exercise price
$1 to $30	46,850	2.41	$ 22.61	46,850	$ 22.61
$30 to $60	772,848	2.39	47.18	677,716	45.88
$60 to $90	328,972	1.91	80.31	179,723	78.49
$90 to $120	277,225	3.35	99.87	56,482	98.64
$120 to $150	200,931	4.11	122.58	22,750	126.68
$150 to $180	93,500	2.72	154.24	44,625	154.21
	1,720,326	2.67	$ 75.96	1,028,146	$ 59.91

The per share weighted-average fair value of stock options granted during 2022 was $42.82 (year ended December 31, 2021 – $32.77) on the date of grant using the Black Scholes option-pricing model with the following weighted-average assumptions:

	2022	2021
Expected dividend yield	0%	0%
Risk-free interest rate	2.75%	0.53%
Expected life	3 to 5 years	3 to 5 years
Estimated volatility	41%	39%

Share Unit Plan

In June 2021, Kinaxis shareholders voted to approve an amendment to the Company's Share Unit Plan to increase the maximum number of shares reserved for issue by 500,000. In June 2022, Kinaxis shareholders voted to approve an amendment to the Company's Share Unit Plan to increase the maximum number of shares reserved for issue by 1,250,000. At December 31, 2022, there were 1,579,703 share units available for grant under the Share Unit Plan.

15. Share capital (continued):

The following table presents changes in share units outstanding:

	2022			2021		
	RSU	PSU	DSU	RSU	PSU	DSU
Units outstanding, beginning of year	96,583	31,640	65,441	78,305	—	55,928
Granted	200,865	52,209	9,954	106,001	31,640	9,513
Exercised	(93,388)	(3,776)	—	(85,232)	—	—
Forfeited	(23,321)	(8,695)	—	(2,491)	—	—
Units outstanding, end of year	180,739	71,378	75,395	96,583	31,640	65,441

Each restricted share unit ("RSU") entitles the participant to receive one Common Share. The RSUs generally vest over time in three equal annual tranches. The weighted-average grant date fair value of the RSUs granted during 2022 was $120.84 per unit (year ended December 31, 2021 – $118.49) using the fair value of a Common Share at time of grant.

Each performance share unit ("PSU") entitles the participant to receive up to two Common Shares based on the Company's total shareholder return relative to the total shareholder return of the constituents of the S&P Software & Services Select Industry Index over two- and three-year vesting periods. The weighted-average grant date fair value of the PSUs granted during 2022 was $164.68 per unit (December 31, 2021 – $129.74). The PSUs were valued using a Monte Carlo pricing model based on the fair value of a Common Share at time of grant and the following assumptions:

	2022	2021
Expected dividend yield	0%	0%
Risk-free interest rate	1.40%	0.51%
Performance measurement period	2 to 3 years	2 to 3 years
Estimated volatility	41%	41%
Correlation coefficient to Industry Index	0.53	0.52

Each deferred share unit (DSU) entitles the participant to receive one Common Share. The DSUs vest immediately as the participants are entitled to the shares upon termination of their service. The fair value of the DSUs granted during the 2022 was $116.07 per unit (year ended December 31, 2021 – $110.36) using the fair value of a Common Share at time of grant.

15. Share capital (continued):

Share-based payments expense

The Company estimates a forfeiture rate, based on an analysis of actual forfeitures, to determine share-based payments expense. The following table presents share-based payments expense:

	2022	2021
Stock options	$ 8,438	$ 11,759
Restricted share units	12,888	9,875
Performance share units	3,757	1,659
Deferred share units	1,155	1,050
	$ 26,238	$ 24,343

The following table presents share-based payments expense by function:

	2022	2021
Cost of revenue	$ 3,624	$ 2,001
Selling and marketing	6,191	4,950
Research and development	4,980	6,334
General and administrative	11,443	11,058
	$ 26,238	$ 24,343

16. Earnings per share:

The following table summarizes the calculation of the weighted average number of basic and diluted common shares:

	2022	2021
Issued Common Shares at beginning of year	27,462,834	27,085,922
Effect of shares issued from exercise of options	189,588	157,367
Effect of shares issued from vesting of restricted share units	10,902	4,904
Effect of shares issued from vesting of performance share units	3,776	—
Weighted average number of basic Common Shares	27,667,100	27,248,193
Effect of share options on issue	701,616	—
Effect of share units on issue	240,887	—
Weighted average number of diluted Common Shares	28,609,603	27,248,193

For 2022, 373,309 share options and no share units outstanding (2021 – all share options and share units) were excluded from the weighted average number of diluted common shares as their effect would have been anti-dilutive.

17. Revenue:

The following table presents revenue of the Company:

	2022	2021
SaaS	$ 213,306	$ 174,463
Subscription term license	38,810	6,118
Professional services	98,613	57,640
Maintenance and support	16,160	12,505
	$ 366,889	$ 250,726

The following table presents revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially unsatisfied) at December 31, 2022:

	2023	2024	2025 and thereafter	Total
SaaS	$ 230,147	$ 173,670	$ 145,921	$ 549,738
Maintenance and support	16,181	13,995	12,081	42,257
Subscription term license	6,057	193	—	6,250
	$ 252,385	$ 187,858	$ 158,002	$ 598,245

18. Personnel expenses:

	2022	2021
Salaries including bonuses	$ 158,414	$ 128,890
Benefits	24,300	20,105
Commissions	12,710	10,000
Share-based payments	26,238	24,343
	$ 221,662	$ 183,338

19. Depreciation and amortization:

The following table presents depreciation expense of property and equipment and right-of-use assets by function:

	2022	2021
Cost of revenue	$ 11,217	$ 9,461
Selling and marketing	3	3
Research and development	2,660	3,047
General and administrative	7,616	5,653
	$ 21,496	$ 18,164

The following table presents amortization expense of intangible assets by function:

	2022	2021
Cost of revenue	$ 2,345	$ 1,528
General and administrative	1,219	717
	$ 3,564	$ 2,245

20. Income tax expense:

The income tax amounts recognized in profit and loss are as follows:

	2022	2021
Current tax expense		
Current income tax	$ 3,892	$ 3,466
Deferred tax expense		
Origination and reversal of temporary differences	7,514	(1,204)
	$ 11,406	$ 2,262

20. Income tax expense (continued):

A reconciliation of the income tax expense to the expected amount using the Company's Canadian tax rate is as follows:

	2022	2021
Canadian tax rate	26.50 %	26.50 %
Expected Canadian income tax expense	$ 8,393	$ 291
Increase (reduction) in income taxes resulting from:		
Permanent differences	3,083	2,880
Change in estimates related to prior years	(681)	(1,015)
Change in unrecognized deferred tax assets/liabilities	—	295
Foreign tax rate differences	(25)	78
Future tax rate differential	252	(71)
Other	384	(196)
	$ 11,406	$ 2,262

The following tables present tax effects of temporary differences and carry-forwards, as well as movements in the deferred tax balances:

Deferred tax assets (liabilities)	December 31, 2021	Recognized in profit and loss	Recognized to goodwill	Recognized in equity	December 31, 2022
Tax effect on investment tax credits	$ (918)	$ (857)	$ —	$ —	$ (1,775)
Property and equipment	(3,044)	(1,304)	—	—	(4,348)
Right-of-use assets and liabilities	799	141	—	—	940
Contract acquisition costs	(4,760)	(1,695)	2	—	(6,453)
Intangible assets	(2,724)	648	(4,367)	—	(6,443)
Reserves and accruals	577	75	—	—	652
Share-based payments	9,415	(1,275)	—	(1,159)	6,981
Net operating loss carryforwards	7,196	(4,111)	1,211	—	4,296
Other	(550)	864	40	—	354
	$ 5,991	$ (7,514)	$ (3,114)	$ (1,159)	$ (5,796)

During 2022, the Company recorded $111 of current tax expense directly in equity (2021 – $890) related to tax deductions on share-based payments.

Deferred tax liabilities have not been recognized for temporary differences associated with investments in subsidiaries as the Company is able to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future. The aggregate amount of these temporary differences at December 31, 2022 was $41,729 (2021 – $31,771).

20. Income tax expense (continued):

Deferred tax assets (liabilities)	December 31, 2020	Recognized in profit and loss	Recognized in equity	December 31, 2021
Tax effect on investment tax credits	$ (508)	$ (410)	$ —	$ (918)
Property and equipment	(3,916)	872	—	(3,044)
Right-of-use assets and liabilities	309	490	—	799
Contract acquisition costs	(4,471)	(289)	—	(4,760)
Intangible assets	(3,333)	609	—	(2,724)
Reserves and accruals	1,107	(530)	—	577
Share-based payments	2,294	1,913	5,208	9,415
Net operating loss carryforwards	8,100	(904)	—	7,196
Other	(3)	(547)	—	(550)
	$ (421)	$ 1,204	$ 5,208	$ 5,991

21. Statement of cash flows:

The following table presents changes in operating assets and liabilities:

	2022	2021
Trade and other receivables	$ (75,128)	$ (6,782)
Prepaid expenses	(5,632)	(1,100)
Contract acquisition costs	(5,416)	(3,407)
Trade payables and accrued liabilities	1,677	8,790
Deferred revenue	35,796	7,306
Provisions	(420)	716
	$ (49,123)	$ 5,523

22. Credit facility:

The Company has a CAD$20.0 million revolving demand credit facility which bears interest at bank prime per annum and has not been drawn as at December 31, 2022. As part of the acquisition of Rubikloud Technologies, Inc. in 2020, a Standby Letter of Credit has been issued against this facility in the amount of CAD$1.4 million.

The facility is secured by a general security agreement representing a first charge over the Company's assets. In the event that the Company's aggregate borrowings under the revolving facility exceed CAD$5.0 million, a borrowing limit applies that is based principally on the Company's accounts receivable.

23. Financial instruments:

(a) Fair value of financial instruments:

The carrying amounts of short-term investments, trade and other receivables, unbilled receivables, and trade payables and accrued liabilities approximate fair value due to the short-term maturity of these instruments and

23. Financial instruments (continued):

(a) Fair value of financial instruments (continued):

are considered to be Level 1 financial instruments. The fair value of the contingent consideration has been determined by applying a discounted cash flow technique on the expected future value of shares to be issued and has been recorded as a Level 3 liability as the inputs are not observable and there is no market based activity. Short-term investments consist of term deposits and guaranteed income certificates held with Schedule 1 Canadian banks for maturity terms of three to six months from the date of acquisition. In 2022, there have been no transfers of fair value measurements between Level 1, Level 2 and Level 3 financial instruments.

Reconciliation of Level 3 financial instruments

The following table shows a reconciliation from the opening balance to the closing balance for all Level 3 financial instruments:

	Contingent Consideration	Other income (expense)	Accumulated other comprehensive income (loss)
Balance, December 31, 2021	$ —	$ —	$ —
Assumed in a business combination	9,972	—	—
Net change in fair value (unrealized)	(826)	826	—
Balance, December 31, 2022	$ 9,146	$ 826	$ —

Sensitivity of Level 3 financial instruments

There are no unobservable inputs which, if changed by 10% would significantly impact the fair value of the contingent consideration.

(b) Credit risk:

The following table presents maximum exposure to credit risk for net trade accounts receivable by geographic region:

	2022	2021
United States	$ 77,174	$ 41,031
Europe	35,828	20,153
Asia	4,678	4,658
Canada	3,677	5,276
	$ 121,357	$ 71,118

23. Financial instruments (continued):

(b) Credit risk (continued):

The following table presents aging of net trade accounts receivable:

	2022	2021
Current	$ 91,360	$ 57,431
Past due:		
0 – 30 days	19,355	8,351
31 – 60 days	6,126	1,040
Greater than 60 days	4,516	4,296
	$ 121,357	$ 71,118

At December 31, 2022, no customer individually accounted for greater than 10% of total trade accounts receivable (December 31, 2021 – one customer). For 2022, no customer individually accounted for greater than 10% of revenue (2021 – no customers).

The Company measures a loss allowance based on the lifetime expected credit losses. Lifetime expected credit losses are estimated based on factors such as the Company's past experience of collecting payments, the number of delayed payments in the portfolio past the average credit period, observable changes in national or local economic conditions that correlate with default on receivables, financial difficulty of the borrower, and it becoming probable that the borrower will enter bankruptcy or financial re-organization. Financial assets are written off when there is no reasonable expectation of recovery. During the year ended December 31, 2022, the Company wrote off $nil unbilled receivables that were deemed not collectible (2021 – $288). As at December 31, 2022, the Company has recorded a loss allowance of $312 (2021 – $nil).

The Company invests its excess cash in short-term investments with the objective of maintaining safety of principal and providing adequate liquidity to meet all current payment obligations and future planned capital expenditures with the secondary objective of maximizing the overall yield of the investment. The Company manages its credit risk on short-term investments by dealing only with major Canadian banks and investing only in instruments that management believes have high credit ratings. Given these high credit ratings, the Company does not expect any counterparties to these investments to fail to meet their obligations.

The Company's exposure to credit risk is limited to the carrying amount of financial assets.

(c) Liquidity risk:

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due.

The Company's approach to managing liquidity risk is to ensure, as far as possible, that it will always have sufficient liquidity to meet liabilities when due. The Company also manages liquidity risk by continuously monitoring actual and budgeted expenses. Furthermore, the Board of Directors reviews and approves the Company's operating and capital budgets, as well as any material transactions out of the ordinary course of business, including acquisitions or other major investments or divestitures.

At December 31, 2022, the Company had cash and cash equivalents and short-term investments totaling $225,823 (2021 – $233,388). Further, the Company has a credit facility as disclosed in note 22. The Company's trade payables and accrued liabilities are generally due within three months or less.

23. Financial instruments (continued):

(d) Market risk:

Market risk is the risk that changes in market prices, such as foreign exchange rates and interest rates, will affect the Company's income or the value of its holdings of financial instruments.

Currency risk

A portion of the Company's revenues and operating costs are realized in currencies other than its functional currency, such as the Canadian dollar, Japanese Yen, Euro, and Great British Pound. As a result, the Company is exposed to currency risk on these transactions. Additional earnings volatility arises from the translation of monetary assets and liabilities denominated in foreign currencies at the rate of exchange on each date of the Consolidated Statements of Financial Position, the impact of which is reported as a foreign exchange gain or loss.

The Company is also subject to currency risk on its income tax expense due to foreign exchange impacts resulting from translating financial results to local currency for Canadian tax reporting purposes.

The Company's objective in managing its currency risk is to minimize its exposure to currencies other than its functional currency. The Company does so by matching foreign denominated assets with foreign denominated liabilities.

The Company is mainly exposed to fluctuations between the U.S. dollar and the Canadian dollar. For the year ended December 31, 2022, if the Canadian dollar had strengthened 5% against the U.S. dollar, with all other variables held constant, pre-tax profit for the year would have been $7,619 lower (2021 – $6,783 lower). Conversely, if the Canadian dollar had weakened 5% against the U.S. dollar with all other variables held constant, there would be an equal, and opposite impact, on pre-tax profit.

The summary quantitative data about the Company's exposure to currency risk is as follows:

December 31, 2022 In thousands of local currency	USD	CAD	EUR	GBP	JPY
Trade receivables	$ 95,743	$ 1,473	$ 14,194	$ 4,813	$ 418,603
Unbilled receivables	27,016	—	1,174	729	191,212
Other receivables	732	810	1,041	224	3,927
Trade payables	(1,853)	(5,808)	(1,324)	(714)	(193,204)
Accrued liabilities	(13,258)	(9,859)	(1,623)	(193)	(110,587)
	$ 108,380	$ (13,384)	$ 13,462	$ 4,859	$ 309,951

December 31, 2021 In thousands of local currency	USD	CAD	EUR	GBP	JPY
Trade receivables	$ 60,018	$ 1,204	$ 4,431	$ 1,412	$ 365,154
Unbilled receivables	12,838	—	652	1,058	46,998
Other receivables	626	1,564	286	—	—
Trade payables	(7,612)	(1,974)	(231)	(539)	(47,267)
Accrued liabilities	(12,552)	(11,895)	(981)	(1,216)	(123,780)
	$ 53,318	$ (11,101)	$ 4,157	$ 715	$ 241,105

23. Financial instruments (continued):

(d) Market risk (continued):

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market interest rates. The Company believes that interest rate risk is low as the majority of investments are made in fixed rate instruments. As of December 31, 2022, the Company has not drawn on the revolving demand credit facility as disclosed in note 22.

24. Segmented information:

The Company's Chief Executive Officer ("CEO") has been identified as the chief operating decision maker. The CEO evaluates the performance of the Company and allocates resources based on the information provided by the Company's internal management system at a consolidated level. The Company has determined that it has only one operating segment: the design, development, marketing and sale of supply chain management software and solutions.

Geographic information

The following table presents external revenue on a geographic basis:

	2022	2021
United States	$ 218,110	$ 147,115
Europe	99,645	62,461
Asia	40,727	33,719
Canada	8,407	7,431
	$ 366,889	$ 250,726

The following table presents property and equipment on a geographic basis:

	2022	2021
Canada	$ 32,798	$ 34,789
United States	10,368	10,486
Asia	4,745	3,915
Europe	3,941	2,903
	$ 51,852	$ 52,093

24. Segmented information (continued):

The following table presents right-of-use assets on a geographic basis:

	2022	2021
Canada	$ 42,217	$ 45,955
Asia	6,833	3,713
United States	2,658	3,155
Europe	1,829	755
	$ 53,537	$ 53,578

The following table presents intangible assets on a geographic basis:

	2022	2021
Europe	$ 15,787	$ —
Canada	12,484	10,778
	$ 28,271	$ 10,778

25. Related party transactions:

Details of the Company's significant subsidiaries at December 31, 2022 and 2021 are as follows:

Name of subsidiary	Principal Activity	Place of incorporation and operation	Functional Currency	Ownership interest	
				2022	2021
Kinaxis Corp.	Sales	State of Delaware, USA	USA	100%	100%
Kinaxis Europe B.V.	Sales	The Netherlands	EUR	100%	100%
Kinaxis India Private Limited	Support	India	INR	100%	100%
Kinaxis Japan K.K.	Sales	Japan	JPY	100%	100%
Kinaxis UK Limited	Sales	United Kingdom	GBP	100%	100%

Balances and transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and are not disclosed in this note.

During the year, the Company did not enter into any transactions with related parties other than key management personnel, as described below.

Compensation of key management personnel

The Company defines key management personnel as being the Board of Directors, the CEO and his direct reports. The remuneration of key management personnel during the year were as follows:

25. Related party transactions (continued):

	2022	2021
Salary and other short-term benefits	$ 7,399	$ 7,377
Share-based payments	14,770	17,123
	$ 22,169	$ 24,500

26. Capital management:

The Company's capital is composed of its shareholders' equity. The Company's objective in managing its capital is to ensure financial stability and sufficient liquidity to increase shareholder value through organic growth and investment in sales, marketing and product development. The Company's senior management is responsible for managing the capital through regular review of financial information to ensure sufficient resources are available to meet operating requirements and investments to support its growth strategy. The Board of Directors is responsible for overseeing this process. In order to maintain or adjust its capital structure, the Company could issue new shares, repurchase shares, approve special dividends or issue debt.

The Company has access to a revolving demand credit facility which bears interest at bank prime per annum which has not been drawn as at December 31, 2022. The terms of the facility require the Company to meet certain financial covenants which are monitored by senior management to ensure compliance, as outlined in note 22.

27. Contingencies and commitments:

a) Lease agreements:

In the normal course of business, the Company and its subsidiaries enter into lease agreements for facilities or equipment. It is common in such commercial lease transactions for the Company or its subsidiaries as the lessee to agree to indemnify the lessor and other related third parties for liabilities that may arise from the use of the leased assets. The maximum amount potentially payable under the foregoing indemnities cannot be reasonably estimated. The Company has liability insurance that relates to the indemnifications described above.

b) Intellectual property:

The Company includes standard intellectual property indemnification clauses in its software license and service agreements. Pursuant to these clauses, and subject to certain limitations, the Company holds harmless and agrees to defend the indemnified party, generally the Company's business partners and customers, in connection with certain patent, copyright or trade secret infringement claims by third parties with respect to the Company's products. The term of the indemnification clauses is generally for the subscription term and applicable statutory period after execution of the software license and service agreement. In the event an infringement claim against the Company or an indemnified party is successful, the Company, at its sole option, agrees to do one of the following: (i) procure for the indemnified party the right to continue use of software; (ii) provide a modification to the software so that its use becomes non-infringing; (iii) replace the software with software which is substantially similar in functionality and performance; or (iv) refund the residual value of the software license fees paid by the indemnified party for the infringing software. The Company believes the estimated fair value of these intellectual property indemnification clauses is minimal.

Historically, the Company has not made any significant payments related to the above-noted guarantees and indemnities and accordingly, no liabilities have been accrued in the consolidated financial statements.

27. Contingencies and commitments (continued):

c) Litigation:

The Company is involved in litigation with a competitor, whereby the competitor has made certain allegations concerning patent infringement. The Company will accrue a liability if the Company determines that it is more likely than not that a present obligation exists that will result in an outflow of resources and the amount of the obligation can be reliably estimated. Significant judgment is required in both the determination of probability and the determination as to whether an amount of an obligation is reliably estimable. The Company has assessed that its defense against these allegations will more likely than not be successful and a present obligation does not exist. At December 31, 2022, the Company has not recorded a liability regarding these allegations.

The Company is required to apply judgment with respect to any potential loss or range of loss in connection with litigation. The outcome of litigation and claims is intrinsically subject to considerable uncertainty.

d) Commitments:

During 2022, the Company contracted to purchase cloud data services for a minimum purchase commitment of $100.0 million over a seven-year term.

Management's Discussion and Analysis for the Year Ended December 31, 2022

Kinaxis Inc.

Management's discussion and analysis

for the year ended December 31, 2022

March 1, 2023

Unless the context requires otherwise, all references in this management's discussion and analysis (the "MD&A") to "Kinaxis", "we", "us", "our" and the "Company" refer to Kinaxis Inc. and its subsidiaries as constituted on December 31, 2022. This MD&A has been prepared with an effective date of March 1, 2023.

This MD&A for the year ended December 31, 2022 should be read in conjunction with our annual audited consolidated financial statements and the related notes thereto as at and for the year ended December 31, 2022. The financial information presented in this MD&A is derived from our annual audited consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. This MD&A contains forward-looking statements that involve risks, uncertainties and assumptions, including statements regarding anticipated developments in future financial periods and our future plans and objectives. There can be no assurance that such information will prove to be accurate, and readers are cautioned not to place undue reliance on such forward-looking statements. See "Forward-looking statements".

This MD&A includes certain trademarks, trade names and service marks which are protected under applicable intellectual property laws and are the property of Kinaxis. Solely for convenience, our trademarks, such as "Kinaxis" and "RapidResponse", may appear without the ® or ™ symbol, but such references are not intended to indicate, in any way, that we will not assert our rights to these trademarks, trade names and service marks to the fullest extent under applicable law. Trademarks used in this MD&A, other than those that belong to Kinaxis, are the property of their respective owners.

All references to $ or dollar amounts in this MD&A are to U.S. currency unless otherwise indicated.

Additional information relating to Kinaxis Inc., including the Company's most recently completed Annual Information Form, can be found on SEDAR at www.sedar.com.

Non-IFRS measures and ratios

This MD&A makes reference to certain non-IFRS measures and ratios such as "Adjusted profit", "Adjusted EBITDA" and "Adjusted diluted earnings per share". These non-IFRS measures and ratios are not recognized, defined or standardized measures under IFRS. Our definition of Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share will likely differ from that used by other companies and therefore comparability may be limited.

Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share should not be considered a substitute for, or be used in isolation from measures prepared in accordance with IFRS. These non-IFRS measures and ratios should be read in conjunction with our annual audited consolidated financial statements and the related notes thereto as at and for the year ended December 31, 2022. Readers should not place undue reliance on non-IFRS measures and ratios and should instead view them in conjunction with the most comparable IFRS financial measures. See the reconciliations of Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share to the most comparable IFRS financial measure in the "Reconciliation of non-IFRS measures and ratios" section of this MD&A.

Forward-looking statements

This MD&A contains forward-looking statements that relate to our current expectations and views of future events. In some cases, these forward-looking statements can be identified by words or phrases such as "may", "will", "could", "expect", "anticipate", "aim", "estimate", "plan", "seek", "believe", "potential", "predict", "ongoing", "continue", "is/are likely to" or the negative of these terms, or other similar expressions intended to identify forward-looking statements.

Forward-looking statements are intended to assist readers in understanding management's expectations as of the date of this MD&A and may not be suitable for other purposes. 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 and financial needs. These forward-looking statements include, among other things, statements relating to:

- our expectations about our revenue, expenses and operations;
- our expectations about the benefits of our acquisitions
- our anticipated cash needs;

- our ability to protect, maintain and enforce our intellectual property rights, including our ability to defend against third party claims;
- third party claims of infringement or violation of, or other conflicts with, intellectual property rights by us;
- our plans for and timing of expansion of our solutions and services;
- our future growth plans and strategy;
- the acceptance by our customers and the marketplace of new technologies and solutions;
- our ability to attract new customers and develop and maintain existing customers;
- our ability to attract and retain our people;
- our expectations with respect to advancement in our technologies;
- our competitive position and our expectations regarding competition;
- regulatory developments and the regulatory environments we operate in;
- anticipated trends and challenges in our business and the markets we operate in;
- expansion of our partnerships;
- expectations relating to a hybrid office/work-from-home approach and results on the Company's carbon footprint;
- anticipated trends, standards and challenges in our business and the markets we operate in; and
- expected impact of pandemics on the Company's future operations and performance.

Forward-looking statements are based on certain assumptions and analyses made by us in light of our experience and perception of historical trends, current conditions and expected future developments and other factors we believe are appropriate. Expected future developments include growth in our target market, an increase in our subscription and professional services revenue based on trends in customer behavior, increasing sales and marketing expenses, research and development expenses and general and administrative expenses based on our business plans and our continued ability to realize on the benefits of tax credits in the near term. Although we believe that the assumptions underlying the forward-looking statements are reasonable, they may prove to be incorrect.

Whether actual results, performance or achievements will conform to our expectations and predictions is subject to a number of known and unknown risks and uncertainties, including those set forth below under the heading "Risks and Uncertainties". These risks and uncertainties could cause our actual results, performance, achievements and experience to differ materially from the future expectations expressed or implied by the forward-looking statements. In light of these risks and uncertainties, readers should not place undue reliance on forward-looking statements.

All of the forward-looking statements in this MD&A are qualified by these cautionary statements and other cautionary statements or factors contained herein. There is no assurance that the actual results or developments will be realized or, even if substantially realized, that they will have the expected consequences to, or effects on, Kinaxis.

The forward-looking statements made in this MD&A relate only to events or information as of the date of this MD&A and are expressly qualified in their entirety by this cautionary statement. We do not assume any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless we are required by law to do so.

Risks and uncertainties

We are exposed to risks and uncertainties in our business, including the risk factors set forth below:

Strategic risks

- If we're unable to develop new products and services, sell our solutions into new markets or further penetrate our existing markets, our revenue will not grow as expected.
- If we do not adequately scale our operations to meet and sustain our growth objectives, it could affect our ability to remain competitive and adversely affect our business.

- If we do not maintain the compatibility of our solutions with third party applications that our customers use in their business processes, demand for our solutions could decline.
- If we're unable to assess and adapt to rapid technological developments, it could impair our ability to remain competitive.
- If we fail to protect our intellectual property and proprietary rights adequately, our business could be adversely affected.
- If a third party makes an assertion that we're infringing its intellectual property, it could subject us to costly and time-consuming litigation or expensive licenses which could harm our business.
- We participate in highly competitive markets, and our failure to compete successfully would make it difficult for us to add and retain customers and would reduce or impede the growth of our business.
- If we're unable to retain our key employees, or effectively compete for talent, our business would be harmed and we might not be able to implement our business plan successfully.
- Our growth depends on the continued development of our direct sales force.
- As we increase our emphasis on our partner ecosystem, we may encounter new risks, such as dependence on partners for a material portion of our revenue and potential channel conflict.
- Mergers or other strategic transactions involving our competitors or customers could weaken our competitive position, which could harm our results of operations.
- We may not receive significant revenue as a result of our current research and development efforts.
- Our business may suffer if we do not develop widespread brand awareness cost-effectively.
- Our strategy includes pursuing acquisitions and our potential inability to successfully integrate newly-acquired companies or businesses may adversely affect our financial results.
- Efforts to reduce climate change could affect our sales and financial results.
- We may need to raise additional funds to pursue our growth strategy or continue our operations, and we may be unable to raise capital when needed or on acceptable terms.
- There is an increased expectation by various stakeholders to address social and environmental challenges, including climate change, human rights, racism and inequality, and to demonstrate exemplary governance in managing Environmental, Social and Governance risks. An inability to manage this risk can can result in higher costs for capital, regulatory compliance and disclosures.

Financial risks

- If we're unable to attract new customers or sell additional products to our existing customers, our revenue growth and profitability will be adversely affected.
- We derive a significant portion of our revenue from a relatively small number of customers, and our growth depends on our ability to retain existing customers and add new customers.
- We encounter long sales cycles, particularly with our larger customers, which could have an adverse effect on the amount, timing and predictability of our revenue.
- We rely significantly on recurring revenue, and if recurring revenue declines or contracts are not renewed, our future results of operations could be harmed.
- Downturns or upturns in new sales will not be immediately reflected in operating results and may be difficult to discern.
- Our quarterly results of operations may fluctuate. As a result, we may fail to meet or exceed the expectations of investors or securities analysts which could cause our share price to decline.
- We may incur operating losses in the future.
- Downturns in general economic and market conditions and reductions in IT spending may reduce demand for our solutions, which could negatively affect our revenue, results of operations and cash flows.
- We are subject to fluctuations in currency exchange rates.
- If we experience significant fluctuations in our rate of anticipated growth and do not balance our expenses with our revenue forecasts, our results could be harmed.

Operational risks

- Our solutions are complex and customers may experience difficulty in implementing or upgrading our products successfully or otherwise achieving the benefits attributable to our products.
- Security and privacy breaches, including ransomware and cyberattacks, could delay or interrupt service to our customers, harm our reputation or subject us to significant liability and adversely affect our business and financial results. Our ability to retain customers and attract new customers could be adversely affected by an actual or perceived breach of security or privacy relating to customer information.
- We enter into service level agreements with all our customers. If we do not meet these contractual commitments, we could be obligated to provide credits or refunds for prepaid amounts related to unused subscription services or face contract terminations, which could adversely affect our revenues.
- If our productivity is impacted as a result of remote work, we may incur additional costs to address such issues and our financial condition and results may be adversely impacted.
- Events that are out of our control, such as a geopolitical crisis, widespread outbreak of an illness or other health issue, a natural disaster or terrorist attack could negatively affect various aspects of our business.
- Interruptions or delays in the services provided by third parties could impair the delivery of our solutions and our business could suffer.
- We may experience service failures or interruptions due to defects in the software, infrastructure, third party components or processes that comprise our existing or new solutions, any of which could adversely affect our business.
- The use of open source software in our products may expose us to additional risks and harm our intellectual property.
- Because our long-term success depends, in part, on our ability to continue to expand the sales of our solutions to customers located outside North America, our business will be susceptible to risks associated with international operations.
- The outcome of any litigation, arbitration or other dispute resolution proceedings that we may engage in from time to time is inherently uncertain. We may become defendants in legal proceedings where we are unable to assess our exposure and this could result in significant liabilities in the event of an adverse judgment or decision.

Regulatory and compliance risks

- Privacy and security concerns, including evolving laws and regulations in these areas, could adversely affect our business and operating results.
- Current and future accounting pronouncements and other financial reporting standards might negatively impact our financial results.
- We are subject to taxation in various jurisdictions and the taxing authorities may disagree with our tax positions.

Other risks

- Future pandemics may heighten many of the risks and uncertainties identified herein, and could have a material adverse impact on our business, operations or financial performance in a manner that is difficult to predict.
- The market price of our common shares may be volatile and may experience significant fluctuations in response to numerous factors, many of which are beyond our control.
- We may issue and sell additional securities to finance our operations or issue securities to directors, officers, employees and consultants of the Company in connection with security based compensation arrangements. Sales or issuances of substantial amounts of our securities, or the perception that such issuances or sales could occur, may adversely affect prevailing market prices for our securities issued and outstanding from time to time.

These risks are described in further detail in the section entitled “Risk Factors” in our most recently filed Annual Information Form.

Overview

Kinaxis® is a leading provider of cloud-based subscription software that enables its customers to improve and accelerate analysis and decision-making across their supply chain operations. We combine human intelligence with artificial intelligence (AI) and our unique concurrent technique to help companies plan for the future, monitor risks and opportunities and respond at the pace of change. Our industry-proven applications and extensible, cloud-based RapidResponse® platform empowers planners, managers, business leaders and information technology (IT) professionals to know sooner, act faster and remove waste so they can make decisions that improve the bottom line, make better use of resources and facilitate better work-life balance.

We serve the needs of Global Fortune 100, Fortune 500 and other large and mid-size companies across seven vertical markets: high technology and electronics manufacturing, aerospace and defense, industrial products, life sciences and pharmaceuticals, automotive, consumer products and retail. Customers are primarily global enterprises with complex supply chain networks and significant unresolved supply chain challenges. Our customers include many leading organizations like Merck & Co., Ford Motor Company, Proctor & Gamble and Schneider Electric, and tend to select RapidResponse as a purpose-built solution to holistically address an end-to-end supply chain management requirement, rather than using bundled solutions from enterprise resource planning (ERP) vendors like Oracle or SAP. We believe this market is growing because of several factors, including the increased complexity and globalization of supply chains, outsourcing, a diversity of data sources and systems, competitive pressures and a growing awareness of the criticality of creating truly agile supply chains, as highlighted by the COVID-19 crisis.

Recurring revenue model

We sell our product using a subscription-based model, with the product being delivered from the cloud in the vast majority of cases, from locations we manage within leased third-party data center facilities. Revenue from product delivered from the cloud is recorded as Software as a Service ("SaaS") revenue. Certain customers have licensed our subscription product on an on-premise basis or have retained the option to take the hosted software on-premise as a hybrid subscription. Under IFRS 15, for on-premise and hybrid customers, the deemed software component for the applicable subscription term is recognized as "subscription term license revenue" upon initiation or renewal of the subscription contract term, with the remaining maintenance and support component and hosting services for hybrid subscriptions recognized ratably over the term as "maintenance and support revenue".

Our subscription customers generally enter into three to five year agreements which are paid annually in advance. SaaS and on-premise subscription agreements are generally subject to price increases upon renewal reflecting both inflationary increases and the additional value provided by our solutions. In addition to the expected increase in SaaS and subscription term license revenue from price increases over time, existing customers may subscribe for additional applications, users or sites during the terms of their agreements. Our subscription fee generally depends on the size of our customer, the number of applications deployed, the number of users and the number of licensed manufacturing, distribution and inventory sites. The average annual contract value fluctuates from period to period depending on the number and size of new customer arrangements and the extent to which we are successful in expanding adoption of our products by existing customers. For certain contracts, a component of consideration is recognized on a unit basis in accordance with transaction volume. We also provide professional services for implementation and configuration of the product, as well as ongoing technical services and training. Professional services are typically billed on a time and material basis.

Our subscription model results in a high proportion of recurring revenue, which includes SaaS and maintenance and support revenue (see "Significant Factors Affecting Results of Operations – Revenue"). While the underlying contracts for on-premise subscription agreements are typically structured in the same manner as for our cloud-delivered customers, including contracted, recurring annual payments, under IFRS 15 for on-premise customers we are required to separately report revenue as two components: the deemed software component and the maintenance and support component. The deemed software component for the entire term of these on-premise subscriptions is recognized as revenue upon contract term commencement or renewal (as a subscription term license). The amount and timing of any recurring subscription term license revenue from on-premise subscription agreements is subject to the timing and length of the renewal term of the agreement.

We believe the power of the subscription model is only fully realized when a vendor has high retention rates. High customer retention rates generate a long customer lifetime and a very high lifetime value of the customer. Our annual net revenue retention rates remain over 100%, which includes sales of additional applications, users and sites to existing customers.

The recurring nature of our revenue provides high visibility into future performance, and upfront payments result in cash flow generation in advance of revenue recognition. Typically, approximately 80% of our expected annual SaaS revenue is recognized from customer contracts that are in place at the beginning of the year and this continues to be our target model going forward. However, this also means that agreements with new customers or agreements with existing customers purchasing additional applications, users or sites in a quarter may not contribute significantly to revenue in the current quarter. For example, a new customer who enters into an agreement late in a quarter will typically have limited contribution to the revenue recognized in that quarter.

Strong financial track record

We have established a consistent financial track record of strong revenue growth, solid earnings performance and cash generation. Our SaaS revenue growth is driven both by contracts with new customers and expansion of our solution within our existing customer base. Subscription term license revenue is generally driven by the timing of renewals of the underlying on-premise customer contracts. Our combined net revenue retention from both SaaS and on-premise subscriptions is greater than 100%, reflecting our longer term contract structure and strong renewal history.

For the three months and year ended December 31, 2022, our SaaS revenue was $58.8 million and $213.3 million (three months and year ended December 31, 2021 – $46.9 million and $174.5 million), subscription term license revenue was $9.1 million and $38.8 million (three months and year ended December 31, 2021 – $1.4 million and $6.1 million) and total revenue was $98.5 million and $366.9 million (three months and year ended December 31, 2021 – $68.5 million and $250.7 million). For the three months and year ended December 31, 2022 our Adjusted EBITDA was 21% of revenue (three months and year ended December 31, 2021 – 16%). Our ending cash, cash equivalents and short-term investment balance was $225.8 million (December 31, 2021 – $233.4 million).

For the three months and year ended December 31, 2022 our ten largest customers accounted for 24% of our total revenues (three months and year ended December 31, 2021 – 26% and 25%) with no customer accounting for greater than 10% of total revenues (three months and year ended December 31, 2021 – no customers).

Growth strategy

Increasing revenues through new customer wins is one of our highest organizational priorities. Our sales cycle can be lengthy, up to 18 months. We generally target very large organizations with significant internal processes for adoption of new systems. We currently pursue a revenue growth model that includes both direct sales through our internal sales force, as well as indirect sales supported by our system integrator, value added reseller and other service partners.

We continue to invest in our partnerships both from a sales and product implementation perspective. We work with global and regional system integrators, which are able to positively influence the decision-making process at major target customers and help customers realize end-to-end supply chain optimization by implementing our industry-leading concurrent planning solution. Such partners include Accenture, Deloitte, EY, Genpact, mSE Solutions, Argon Groupe and Cognizant. Our referral partners direct new opportunities to us under a business arrangement. We regard Value Added Resellers as an extension of our sales force that resells and supports RapidResponse in select markets, with a focus on mid-market companies. Finally, we work with solution extension partners, such as 4flow, OCYO Consulting, and PlanetTogether to provide additional applications on our platform, and project44, LevaData and Blume Global to provide additional data streams and signaling to increase the value that customers gain from RapidResponse. These partners, which we work with under revenue sharing agreements, deliver digital inputs or domain-specific applications that leverage the power of concurrent planning and extend the capabilities of the platform.

Due to the growth in the market and the increasing need for solutions, we expect competition in the industry from new entrants and larger incumbent vendors to increase. In addition to this increased competitive pressure, changes in the global economy, most notably due to COVID-19 in recent periods, may have an impact on the timing and ability of these enterprises to make buying decisions, which may have an impact on our performance.

We are headquartered in Ottawa, Ontario. We have subsidiaries located in the United States, France, Germany, Romania, Ireland, the United Kingdom, Hong Kong, South Korea, and Singapore, and subsidiaries and offices in Tokyo, Japan, the Netherlands and Chennai, India. We continue to expand our operations internationally. For the three months and year ended December 31, 2022 62% of our revenues were derived from North American customers (three months and year ended December 31, 2021 – 59% and 62%) and our remaining revenues were derived from European and Asian customers.

On February 11, 2022, we acquired 100% of the outstanding shares of a supply chain solutions company in exchange for total consideration of $3.1 million in cash. The acquired company is a provider of algorithm-driven supply chain planning software modules.

On August 15, 2022, the Company acquired 100% of the outstanding shares of MP Objects B.V. ("MPO") and all wholly owned subsidiaries in exchange for total consideration of $33.8 million in cash and contingent consideration of 86,335 shares of the Company that had a fair value at the date of acquisition of approximately $10.0 million. MPO offers a natively unified cloud platform for Multi-Party Orchestration, which optimizes order, inventory, and transportation across dynamic, multi-party networks.

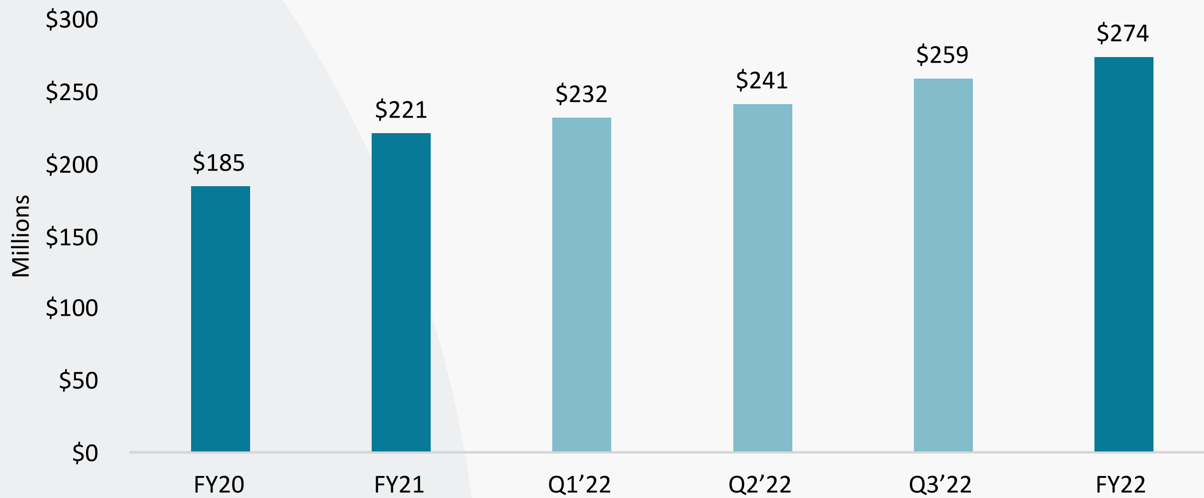
Key performance indicators

We use a number of key performance indicators to assess the performance of our business including Annual Recurring Revenue (ARR) and Remaining Performance Obligation (RPO). These financial measures do not have any standardized meaning prescribed by IFRS and therefore may not be comparable to similar measures presented by other issuers and cannot be reconciled to a directly comparable IFRS measure. We evaluate our performance by comparing our actual results to budgets, forecasts and prior period results. Our key performance indicators may be calculated in a manner different than similar key performance indicators used by other companies.

Annual Recurring Revenue

Annual Recurring Revenue (ARR) is the total annualized value of recurring subscription amounts (ultimately recognized as SaaS, Subscription Term Licenses and Maintenance & Support revenue) of all subscription contracts at a point in time. Annualized subscription amounts are determined solely by reference to the underlying contracts, normalizing for the varying revenue recognition treatments under IFRS for cloud-based versus on-premise subscription amounts. It excludes one-time fees, such as for non-recurring professional services, and assumes that customers will renew the contractual commitments on a periodic basis as those commitments come up for renewal, unless such renewal is known to be unlikely at period end. We believe that this measure provides a more current indication of our performance in the growth of our subscription business than other metrics.

The Company's ARR at December 31, 2022 is $274 million, an increase of 24% year-over-year or 26% on a constant currency basis. We calculate constant currency growth rates by applying the applicable prior period exchange rates to current period results.

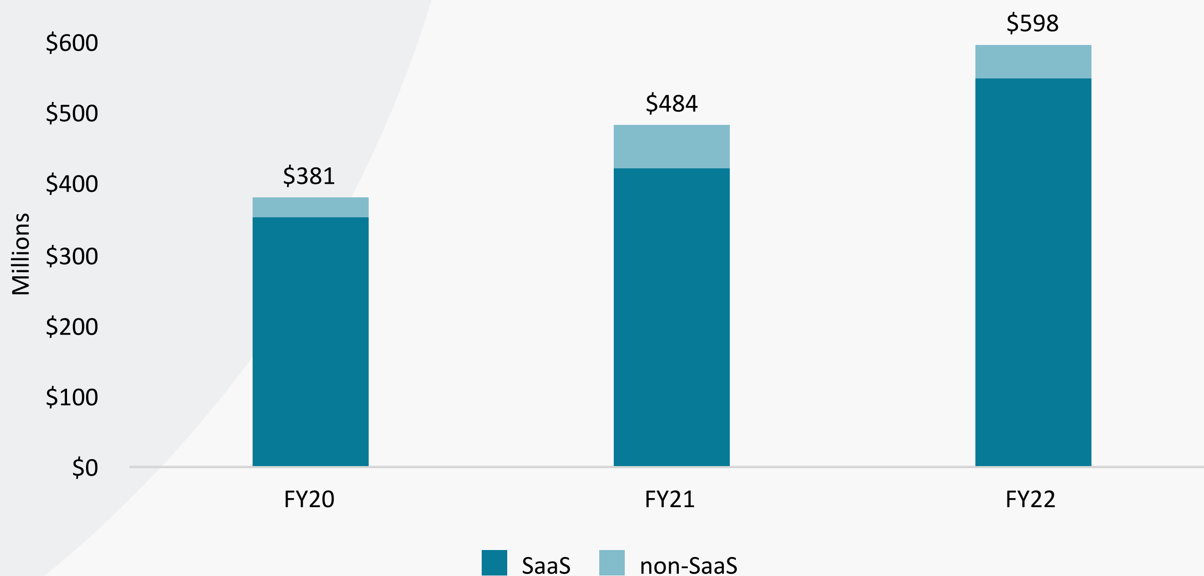


	FY20	FY21	Q1'22	Q2'22	Q3'22	FY22
Year-over-year growth	17%	19%	22%	21%	25%	24%
Year-over-year growth in constant currency	15%	21%	24%	25%	30%	26%

Remaining Performance Obligation

Remaining Performance Obligation (RPO) represents the minimum contracted revenue expected to be recognized in the future related to performance obligations that are unsatisfied or partially unsatisfied at period end. Our business model continues to focus on delivering long-term value to our customers. As a result, we typically enter into three to five-year agreements with our customers. RPO is not necessarily indicative of future revenue growth and is influenced by several factors, including seasonality, the timing of renewals, average contract terms, foreign currency exchange rates and fluctuations in new business growth. RPO is also impacted by acquisitions.

As at December 31, 2022, RPO amounts to $598 million, including $550 million in SaaS revenue (December 31, 2021 – $484 million and $423 million).



Significant factors affecting results of operations

Our results of operations are influenced by a variety of factors, including:

Revenue

Our revenue consists of SaaS revenue, subscription term license revenue, professional services revenue and maintenance and support revenue.

SaaS revenue is comprised of subscription fees for provision of our products as software as a service in our hosted, cloud environment. This includes hosting services and maintenance and support for the solution over the term of the contract when the product is provided from the cloud under a SaaS arrangement.

Professional services revenue is comprised of fees charged to assist organizations to implement and integrate our solution and train their staff to use and deploy our solution. Professional service engagements are contracted on a time and materials basis including billable travel expenses and are billed and recognized as revenue as the service is delivered. In certain circumstances, we enter into arrangements for professional services on a fixed price basis; in these cases, revenue is recognized by reference to the stage of completion of the contract.

Subscription term license revenue is comprised of fees for the implied software component for on-premise and hybrid subscriptions, which is recognized as revenue upon term commencement. Hybrid subscription refers to the option of certain customers to take the hosted software on-premise.

Maintenance and support revenue is comprised of fees for the implied maintenance and support component for on-premise and hybrid subscriptions.

Cost of revenue

Cost of revenue consists of personnel, travel and other overhead costs related to implementation teams supporting initial deployments, training services and subsequent stand-alone engagements for additional services. Cost of revenue also includes personnel and overhead costs associated with our customer support team, amortization related to acquired technology and internally developed software, depreciation related to our computer hardware and leased data center facilities where we physically host our SaaS solution, and network connectivity costs for the provisioning of hosting services under SaaS arrangements.

Selling and marketing expenses

Selling and marketing expenses consist primarily of personnel and related costs for our sales and marketing teams, including salaries and benefits, contract acquisition costs including commissions earned by sales personnel and partner referral fees, partner programs support and training, and trade show and promotional marketing costs.

We plan to continue to invest in sales and marketing by expanding our domestic and international selling and marketing activities, building brand awareness, developing partners, and sponsoring additional marketing events. We expect that in the future, selling and marketing expenses, in absolute dollars, will continue to increase.

Research and development expenses

Research and development expenses consist primarily of personnel and related costs for the teams responsible for the ongoing research, development and product management of our supply chain management solutions. These expenses are recorded net of any applicable scientific research and experimental development investment tax credits ("investment tax credits") earned for expenses incurred in Canada against eligible projects. We only record non-refundable tax credits to the extent there is reasonable assurance we will be able to use the investment tax credits to reduce current or future tax liabilities. As the Company has an established history of profits, we do expect to realize the benefit of these tax credits in the near term. Further, we anticipate that spending on research and development will also be higher in absolute dollars as we expand our research and development and product management teams.

General and administrative expenses

General and administrative expenses consist primarily of personnel and related costs associated with administrative functions of the business including finance, human resources and internal information system support, as well as legal, accounting and other professional fees and amortization related to customer relationships. We expect that, in the future, general and administrative expenses will continue to increase in absolute dollars as we invest in our infrastructure and we incur additional employee-related costs and professional fees related to the growth of our business and international expansion.

Foreign exchange

Our presentation and functional currency is USD with the exception of our subsidiaries in South Korea (Korean Won), Japan (Japanese Yen), the Netherlands, Romania, France, Germany and Ireland (Euro), the United Kingdom (British Pound) and India (Indian Rupee). We derive most of our revenue in USD. Our head office and a significant portion of our employees are located in Ottawa, Canada, and as such approximately half of our expenses are incurred in Canadian dollars.

Results of operations

Summary of results

The following table sets forth a summary of our results of operations:

	Three months ended December 31,		Year ended December 31,		
	2022	2021	2022	2021	2020
	(In thousands of USD, except earnings per share)				
Statement of Operations					
Revenue	$ 98,483	$ 68,506	$ 366,889	$ 250,726	$ 224,189
Cost of revenue	37,217	24,619	131,102	86,755	70,131
Gross profit	61,266	43,887	235,787	163,971	154,058
Operating expenses	54,511	46,608	207,866	162,052	133,282
	6,755	(2,721)	27,921	1,919	20,776
Foreign exchange gain (loss)	1,648	(194)	1,499	(558)	(196)
Net finance and other income (expense)	891	(36)	1,240	(264)	890
Change in fair value of contingent consideration	(1,367)	—	826	—	—
Profit (loss) before income taxes	7,927	(2,951)	31,486	1,097	21,470
Income tax expense (recovery)	(635)	(32)	11,406	2,262	7,740
Profit (loss)	$ 8,562	$ (2,919)	$ 20,080	$ (1,165)	$ 13,730
Adjusted profit[(1)]	$ 17,487	$ 4,430	$ 45,492	$ 15,988	$ 30,947
Adjusted EBITDA[(1)]	$ 21,116	$ 11,277	$ 79,446	$ 39,851	$ 53,751
Basic earnings (loss) per share	$ 0.31	$ (0.11)	$ 0.73	$ (0.04)	$ 0.51
Diluted earnings (loss) per share	$ 0.30	$ (0.11)	$ 0.70	$ (0.04)	$ 0.49
Adjusted diluted earnings per share[(1)]	$ 0.61	$ 0.16	$ 1.59	$ 0.56	$ 1.10

Note:

(1) Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share are non-IFRS measures and ratios. See "Non-IFRS measures and ratios". For a reconciliation of these measures to the closest IFRS measure, where a comparable IFRS measure exists, see "Reconciliation of non-IFRS measures and ratios" below.

	As at December 31, 2022	As at December 31, 2021	As at December 31, 2020
		(In thousands of USD)	
Total assets	$ 648,273	$ 520,269	$ 428,410
Total non-current liabilities	56,838	53,242	14,794

Reconciliation of non-IFRS measures and ratios

To supplement our consolidated financial statements, which are prepared and presented in accordance with IFRS, we provide investors with the following non-IFRS financial measures and ratios: Adjusted profit, Adjusted diluted earnings per share and Adjusted EBITDA. We believe that securities analysts, investors and other interested parties frequently use non-IFRS measures and ratios in the evaluation of performance. Management also uses non-IFRS measures and ratios in order to facilitate operating performance comparisons from period to period, prepare annual operating budgets and assess our ability to meet our capital expenditure and working capital requirements.

Adjusted profit and Adjusted diluted earnings per share

Adjusted profit represents profit adjusted to exclude the change in the fair value of contingent consideration, our equity compensation plans and other non-recurring items. The other non-recurring item during the three months ended December 31, 2021 of $0.7 million relates to the provision for future variable lease payments for our former head office space which is no longer in use. The non-recurring items during the year ended December 31, 2021 of $7.2 million relate to non-refundable government grants related to the pandemic of $7.9 million net of the $0.7 million provision for future variable lease payments. Adjusted diluted earnings per share represents diluted earnings per share calculated using Adjusted profit. We use Adjusted profit and Adjusted diluted earnings per share as these measures and ratios better align with our performance and improve comparability against our peers.

Adjusted EBITDA

Adjusted EBITDA represents profit adjusted to exclude the change in the fair value of contingent consideration, our equity compensation plans, other non-recurring items, income tax expense (recovery), depreciation and amortization, foreign exchange loss (gain), and net finance expense (income). We use Adjusted EBITDA to provide readers with a supplemental measure of our operating performance and thus highlight trends in our core business that may not otherwise be apparent when relying solely on IFRS financial measures.

We have reconciled Adjusted profit and Adjusted EBITDA to the most comparable IFRS financial measure as follows:

	Three months ended December 31,		Year ended December 31,		
	2022	2021	2022	2021	2020
			(In thousands of USD)		
Profit (loss)	$ 8,562	$ (2,919)	$ 20,080	$ (1,165)	$ 13,730
Change in fair value of contingent consideration	1,367	—	(826)	—	—
Share-based compensation	7,558	6,633	26,238	24,343	17,217
Non-recurring other items	—	716	—	(7,190)	—
Adjusted profit	$ 17,487	$ 4,430	$ 45,492	$ 15,988	$ 30,947
Income tax expense (recovery)	(635)	(32)	11,406	2,262	7,740
Depreciation and amortization	6,761	6,557	25,060	20,409	15,562
Foreign exchange loss (gain)	(1,648)	194	(1,499)	558	196
Net finance expense (income)	(849)	128	(1,013)	634	(694)
	3,629	6,847	33,954	23,863	22,804
Adjusted EBITDA	$ 21,116	$ 11,277	$ 79,446	$ 39,851	$ 53,751
Adjusted EBITDA as a percentage of revenue	21.4%	16.5%	21.7%	15.9%	24.0%

Revenue

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
SaaS	$ 58,839	$ 46,855	26%	$ 213,306	$ 174,463	22%
Subscription term license	9,131	1,442	533%	38,810	6,118	534%
Professional services	26,156	17,036	54%	98,613	57,640	71%
Maintenance and support	4,357	3,173	37%	16,160	12,505	29%
	98,483	68,506	44%	366,889	250,726	46%

Total revenue for the three months and year ended December 31, 2022 was $98.5 million and $366.9 million, an increase of $30.0 million and $116.2 million compared to the same periods in 2021. This growth in our revenue was due to a 26% and 22% increase in SaaS revenue in the three months and year ended December 31, 2022, as well as a substantial increase in subscription term license revenue and an increase in professional services revenue. The increase in total revenue was partially offset by the negative impact of currency exchange conversion on foreign denominated revenue resulting from the strengthening USD.

SaaS revenue

SaaS revenue for the three months and year ended December 31, 2022 was $58.8 million and $213.3 million, an increase of $12.0 million and $38.8 million compared to the same periods in 2021. These increases were due to contracts secured with new customers, as well as expansion of existing customer subscriptions. These increases were partially offset by the negative impact of converting SaaS revenue for subsidiaries reporting in foreign currencies to USD.

Subscription term license revenue

Subscription term license revenue for the three months and year ended December 31, 2022 was $9.1 million and $38.8 million, an increase of $7.7 million and $32.7 million compared to the same periods in 2021. Generally, subscription term license revenue varies quarter to quarter due to the timing of renewals and expansions for on-premise and hybrid subscription arrangements. The current period fluctuations reflect the normal cycle of such renewals and expansions with existing customers.

Professional services revenue

Professional services revenue for the three months and year ended December 31, 2022 was $26.2 million and $98.6 million, an increase of $9.1 million and $41.0 million compared to the same periods in 2021. The increases were due to significant deployment activity driven by new subscription customers and expansion engagements with our existing customers. Professional services revenue varies quarter to quarter due to the size, timing and scheduling of customer engagements and the level of partner-led engagements.

Maintenance and support revenue

Maintenance and support revenue for the three months and year ended December 31, 2022 was $4.4 million and $16.2 million, an increase of $1.2 million and $3.7 million compared to the same periods in 2021, mostly driven by expansion of existing on-premise customers, as well as contracts with new customers.

Cost of revenue

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
Cost of revenue	$ 37,217	$ 24,619	51%	$ 131,102	$ 86,755	51%
Gross profit	61,266	43,887	40%	235,787	163,971	44%
Gross margin	62%	64%		64%	65%	
Software[(1)]	80%	81%		81%	82%	
Professional services	13%	12%		18%	11%	

Note:

(1) Software gross margin corresponds to SaaS, subscription term license and maintenance and support revenue.

Cost of revenue for the three months and year ended December 31, 2022 was $37.2 million and $131.1 million, increases of $12.6 million and $44.3 million compared to the same periods in 2021 as we invest in the business and support our growing customer base. The areas of increases were headcount and related compensation costs, partner and third-party provider costs, IT costs, depreciation and the absence of non-refundable government grants we claimed in the prior year.

Gross margin for the three months and year ended December 31, 2022 was 62% and 64%, compared to 64% and 65% for the same periods in 2021. Gross margin is driven by a mix of software and professional services gross margins. Overall gross margin decreased in part because professional services revenue was a higher percentage of total revenue in 2022.

Software gross margin for the three months and year ended December 31, 2022 was 80% and 81%, compared to 81% and 82% for the same periods in 2021. The gross margin percentage for software for the three months and year ended December 31, 2022 is lower compared to the same periods in 2021 due primarily to the negative impact of a strengthening USD on conversion of foreign denominated SaaS revenue offset by the higher gross margin realized on subscription term license revenue. Professional services gross margin for the three months and year ended December 31, 2022 was 13% and 18%, compared to 12% and 11% for the same periods in 2021. The higher professional services gross margin was due to an increase in headcount utilization and economies of scale as related revenues increased in the period.

Selling and marketing expenses

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
Selling and marketing	$ 21,213	$ 16,960	25%	$ 79,446	$ 59,078	34%
As a percentage of revenue	22%	25%		22%	24%	

Selling and marketing expenses for the three months and year ended December 31, 2022 were $21.2 million and $79.4 million, an increase of $4.3 million and $20.4 million compared to the same periods in 2021. The increases were due to higher headcount and related compensation costs and marketing program costs as we aim to expand our customer base during this sustained global shift to digital supply chain solutions. In addition, last year we benefited from non-refundable government grants during the pandemic recognized as an offset to salary costs. These cost increases in 2022 were slightly mitigated by a strengthening USD on foreign denominated expenses.

Research and development expenses

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
Research and development	$ 19,494	$ 16,465	18%	$ 74,147	$ 57,424	29%
As a percentage of revenue	20%	24%		20%	23%	

Research and development expenses for the three months and year ended December 31, 2022 were $19.5 million and $74.1 million, an increase of $3.0 million and $16.7 million compared to the same periods in 2021. The increases were due to higher headcount and related compensation costs and public cloud development environment costs incurred in the current year. In addition, last year we benefited from non-refundable government grants during the pandemic recognized as an offset to salary costs. These cost increases in 2022 were partially offset by the positive impact of a strengthening USD on foreign denominated expenses. Our investment in headcount supports ongoing programs to drive further innovation in our RapidResponse platform and ensure sustainable market leadership.

General and administrative expenses

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
General and administrative	$ 13,804	$ 13,183	5%	$ 54,273	$ 45,550	19%
As a percentage of revenue	14%	19%		15%	18%	

General and administrative expenses for the three months and year ended December 31, 2022 were $13.8 million and $54.3 million, an increase of $0.6 million and $8.7 million compared to the same periods in 2021. The increases were due to higher headcount and related compensation costs, IT costs and depreciation. In addition, last year we benefited from non-refundable government grants during the pandemic recognized as an offset to salary costs. These cost increases were partially offset by the positive impact of a strengthening USD on foreign denominated expenses. The increase in general and administrative expenses reflects investments in corporate infrastructure and capability to support our global expansion and growth strategy.

Other income and expense

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
Other income (expense):						
Foreign exchange gain (loss)	$ 1,648	$ (194)	—[1]	$ 1,499	$ (558)	—[1]
Net finance and other income (expense)	891	(36)	—[1]	1,240	(264)	—[1]
Change in fair value of contingent consideration	(1,367)	—	—[1]	826	—	—[1]
Total other income (expense)	1,172	(230)	—[1]	3,565	(822)	—[1]

Note:

(1) The percentage change has been excluded as it is not meaningful.

Total other income (expense) for the three months and year ended December 31, 2022 was $1.2 million and $3.6 million, compared to $(0.2) million and $(0.8) million for the same periods in 2021. The increase in other income (expense) for the three months and year ended December 31, 2022 was due to an increase in foreign exchange gain (loss) and interest income compared to the same periods in 2021 and offset by a decrease in the fair value of contingent consideration for the three months ended December 31, 2022 and includes a net increase in the fair value of the contingent consideration for the year ended December 31, 2022. The increase in foreign exchange gains in three months and year ended December 31, 2022 was driven by gains realized on USD denominated assets held in our foreign subsidiaries.

Income taxes

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
			(In thousands of USD)			
Income tax expense (recovery)	$ (635)	$ (32)	—[1]	$ 11,406	$ 2,262	—[1]

Note:

(1) The percentage change has been excluded as it is not meaningful.

Income tax recovery for the three months ended December 31, 2022 was $0.6 million compared to a nominal amount for the same period in 2021. The decrease in income tax expense was due to lower non-deductible share-based payments, and adjustments to filed positions recorded in the period. This decrease is offset by a higher tax expense due to foreign tax rate changes on higher profit in the period and differentials to the statutory Canadian tax rate.

Income tax expense for the year ended December 31, 2022 was $11.4 million compared to an income tax expense of $2.3 million for the same period in 2021. The increase in income tax expense was primarily due to an increase in profit before tax of the Company and adjustments to filed positions recorded in the period. This was also driven by a decrease in unrecognized deferred tax assets, as all deferred tax assets have been recognized in 2022.

Profit

	Three months ended December 31,		2021 to 2022	Year ended December 31,		2021 to 2022
	2022	2021	%	2022	2021	%
	(In thousands of USD except earnings per share)					
Profit (loss)	$ 8,562	$ (2,919)	—[1]	$ 20,080	$ (1,165)	—[1]
Adjusted profit[2]	17,487	4,430	295%	45,492	15,988	185%
Adjusted EBITDA[2]	21,116	11,277	87%	79,446	39,851	99%
Basic earnings (loss) per share	$ 0.31	$ (0.11)		$ 0.73	$ (0.04)	
Diluted earnings (loss) per share	$ 0.30	$ (0.11)		$ 0.70	$ (0.04)	
Adjusted diluted earnings per share[2]	$ 0.61	$ 0.16		$ 1.59	$ 0.56	

Notes:

(1) The percentage change has been excluded as it is not meaningful.

(2) Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share are non-IFRS measures and ratios. See "Non-IFRS measures and ratios". For a reconciliation of these measures to the closest IFRS measure, where a comparable IFRS measure exists, see "Reconciliation of non-IFRS measures and ratios".

Profit for the three months and year ended December 31, 2022 was $8.6 million and $20.1 million or $0.31 and $0.73 per basic share and $0.30 and $0.70 per diluted share, compared to a loss of $2.9 million and $1.2 million or $0.11 and $0.04 per basic and $0.11 and $0.04 diluted share for the same periods in 2021

The improved profitability reflects revenue growth being realized in profit as we continued to grow the business over the year. The 45% and 47% increases in revenue for the three months and year ended December 31, 2022 were driven primarily by new customers additions and expansion of our existing customer subscriptions related to the sustained global shift to digitized supply chain solutions. Cost of revenues increased to support this revenue, while operating expenses remained consistent or decreased as a percentage of sales, which further supported profitability this year.

Adjusted EBITDA for the three months and year ended December 31, 2022 was $21.1 million and $79.4 million, an increase of $9.8 million and $39.6 million compared to the same periods in 2021. These increases also reflect the realization of revenue growth in profit as the business grows from the addition of new customers and expansion of services to existing customers. Adjusted EBITDA highlights the growth in our core business operations because compared to profit, it excludes the impact of higher expenses recognized in 2022 for income taxes, depreciation and amortization, and stock compensation.

Key balance sheet items

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Total assets	$ 648,273	$ 520,269
Total liabilities	246,845	199,051

An analysis of the key balance sheet items driving the change in total assets and liabilities is as follows:

Trade and other receivables

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Trade accounts receivable	$ 121,669	$ 71,118
Unbilled receivables	30,623	15,413
Taxes receivable	1,830	217
Other	3,847	2,499
Loss allowance	(312)	—
Total trade and other receivables	157,657	89,247

Trade accounts receivable at December 31, 2022 were $121.7 million, an increase of $50.6 million compared to December 31, 2021 due to growth in revenue and variances in the timing of billings and collections. The aging of trade receivables is generally current or within 30 days past due and overdue amounts do not reflect any significant credit issues. The balance at any point in time is impacted by the timing of the annual subscription billing cycle for each customer and when new customer contracts are secured. Unbilled receivables at December 31, 2022 were $30.6 million, an increase of $15.2 million compared to December 31, 2021 due to renewals and expansion of on-premise or hybrid subscription agreements resulting in recognition of subscription term license revenue in advance of invoicing under the respective agreements, as well as an increase in unbilled professional services.

Property and equipment

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Land	$ 18	$ 18
Computer equipment	27,595	29,509
Computer software	984	781
Office furniture and equipment	2,395	2,831
Leasehold improvements	20,860	18,954
Total property and equipment	51,852	52,093

Property and equipment at December 31, 2022 was $51.9 million, a decrease of $0.2 million compared to December 31, 2021. The decrease was due to regular depreciation, partly offset by additions to leasehold improvements for the new head offices in Ottawa and Chennai.

Right-of-use assets & lease obligations

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Right-of-use assets	$ 53,537	$ 53,578
Lease obligations:		
Current	6,991	2,526
Non-current	49,977	53,233
	56,968	55,759

The right-of-use assets and lease obligations relate to our leases for office space and data centres. Right-of-use assets at December 31, 2022 were $53.5 million, consistent with December 31, 2021. Lease obligations at December 31, 2022 were $57.0 million, an increase of $1.2 million compared to December 31, 2021. The increase in lease obligations was due to the additions of new office leases in Chennai and from the MPO acquisition, and were offset by the impact of the strengthening of the USD on foreign denominated lease obligations.

Contract acquisition costs

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Contract acquisition costs	$ 24,892	$ 19,691

Contract acquisition costs are capitalized and amortized over the expected life of the customer upon commencement of the related revenue being recognized. Contract acquisition costs consist of sales commissions paid to employees and third-party referral fees. Variable compensation plans are determined on an annual basis and may differ in how they correlate to revenue from year to year. Contract acquisition costs at December 31, 2022 were $24.9 million, an increase of $5.2 million compared to December 31, 2021. This increase was due to commissions incurred in the period, partly offset by regular amortization.

Deferred revenue

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Deferred revenue	$ 133,467	$ 99,239

Deferred revenue at December 31, 2022 was $133.5 million, an increase of $34.2 million compared to December 31, 2021. We generally bill our customers annually in advance for SaaS agreements resulting in initially recording the amount billed as deferred revenue which is subsequently drawn down to revenue over the agreement term. The change in deferred revenue was due to contracts secured with new customers and expansion of existing customers subject to variances in the timing of billings for new and existing customer contracts. There was no deferred revenue relating to subscription term periods beyond one year.

Summary of quarterly results

The following table summarizes selected results for the eight most recent completed quarters:

	Three months ended							
	Dec 31, 2022	Sep 30, 2022	Jun 30, 2022	Mar 31, 2022	Dec 31, 2021	Sep 30, 2021	Jun 30, 2021	Mar 31, 2021
	(In thousands of USD)							
Revenue:								
SaaS	$ 58,839	$ 54,038	$ 51,109	$ 49,320	$ 46,855	$ 44,731	$ 42,301	$ 40,576
Professional services	26,156	25,613	25,386	21,458	17,036	14,576	14,001	12,027
Maintenance and support	4,357	4,020	3,927	3,856	3,173	3,132	3,134	3,066
Subscription term licenses	9,131	5,827	378	23,474	1,442	1,997	620	2,059
	98,483	89,498	80,800	98,108	68,506	64,436	60,056	57,728
Cost of revenue	37,217	34,395	31,024	28,466	24,619	21,847	19,783	20,506
Gross profit	61,266	55,103	49,776	69,642	43,887	42,589	40,273	37,222
Operating expenses	54,511	52,857	52,031	48,467	46,608	41,557	35,825	38,062
	6,755	2,246	(2,255)	21,175	(2,721)	1,032	4,448	(840)
Foreign exchange gain (loss)	1,648	393	623	(1,165)	(194)	547	(443)	(468)
Net finance and other income (expense)	891	723	(14)	(360)	(36)	(69)	(1)	(158)
Change in fair value of contingent consideration	(1,367)	2,193	—	—	—	—	—	—
Profit (loss) before income taxes	7,927	5,555	(1,646)	19,650	(2,951)	1,510	4,004	(1,466)
Income tax expense (recovery)	(635)	3,927	986	7,128	(32)	1,310	916	68
Profit (loss)	$ 8,562	$ 1,628	$ (2,632)	$ 12,522	$ (2,919)	$ 200	$ 3,088	$ (1,534)
Change in fair value of contingent consideration	1,367	(2,193)	—	—	—	—	—	—
Share-based compensation	7,558	6,174	6,503	6,003	6,633	6,501	5,902	5,307
Non-recurring item	—	—	—	—	716	—	(7,906)	—
Adjusted profit[(1)]	$ 17,487	$ 5,609	$ 3,871	$ 18,525	$ 4,430	$ 6,701	$ 1,084	$ 3,773
Income tax expense (recovery)	(635)	3,927	986	7,128	(32)	1,310	916	68
Depreciation and amortization	6,761	6,324	6,061	5,914	6,557	4,784	4,598	4,470
Foreign exchange loss (gain)	(1,648)	(393)	(623)	1,165	194	(547)	443	468
Net finance expense (income)	(849)	(662)	81	417	128	136	108	262
	3,629	9,196	6,505	14,624	6,847	5,683	6,065	5,268
Adjusted EBITDA[(1)]	$ 21,116	$ 14,805	$ 10,376	$ 33,149	$ 11,277	$ 12,384	$ 7,149	$ 9,041
Basic earnings (loss) per share	$ 0.31	$ 0.06	$ (0.10)	$ 0.46	$ (0.11)	$ 0.01	$ 0.11	$ (0.06)
Diluted earnings (loss) per share	$ 0.30	$ 0.06	$ (0.10)	$ 0.44	$ (0.11)	$ 0.01	$ 0.11	$ (0.06)
Adjusted diluted earnings per share[(1)]	$ 0.61	$ 0.20	$ 0.14	$ 0.65	$ 0.16	$ 0.24	$ 0.04	$ 0.13

Note:

(1) Adjusted profit, Adjusted EBITDA and Adjusted diluted earnings per share are non-IFRS measures and ratios. See "Non-IFRS measures and ratios". For a reconciliation of these measures to the closest IFRS measure, where a comparable IFRS measure exists, see "Reconciliation of non-IFRS measures and ratios".

Our quarterly revenue has generally trended upwards over the past eight quarters, primarily due to sales of new subscriptions for RapidResponse as well as new customer deployment activity. Subscription term license revenue varies quarter to quarter due to the timing of new contracts, expansions and renewals for on-premise and hybrid subscription arrangements.

Cost of revenue has increased as we continue to invest in personnel to support the growth in our business. Gross margin has ranged from 62% to 71% of revenue, with fluctuations due to the change in revenue mix between subscription term license and professional services compared to SaaS, our main contributor of revenue. Operating expenses have increased for the majority of the periods presented primarily due to the addition of personnel in connection with the expansion of our business.

Liquidity and capital resources

Our primary source of cash flow is sales of subscriptions for our software and sales of professional services. Our approach to managing liquidity is to ensure, to the extent possible, that we always have sufficient liquidity to meet our liabilities as they come due. We do so by continuously monitoring cash flow and actual operating expenses compared to budget.

	As at December 31, 2022	As at December 31, 2021
	(In thousands of USD)	
Cash and cash equivalents	$ 175,347	$ 203,220
Short-term investments	50,476	30,168
	225,823	233,388

Cash and cash equivalents decreased by $27.9 million to $175.3 million at December 31, 2022. Short-term investments increased by $20.3 million to $50.5 million at December 31, 2022. Total cash, cash equivalents and short-term investments decreased by $7.6 million to $225.8 million at December 31, 2022.

In addition to the cash, cash equivalents and short-term investment balances, we have a $20.0 million CAD revolving demand facility available to meet ongoing working capital requirements. As part of the acquisition of Rubikloud in 2020, a Standby Letter of Credit has been issued against this facility in the amount of $1.4 million CAD. Our principal cash requirements are for working capital and capital expenditures. Excluding deferred revenue, working capital at December 31, 2022 was $340.6 million. Given the ongoing cash generated from operations and our existing cash and credit facilities, we believe there is sufficient liquidity to meet our current contractual obligations of $189.8 million and finance our longer-term growth.

Cash flow

The following table provides a summary of cash inflows and outflows by activity:

	Three months ended December 31,		Year ended December 31,	
	2022	2021	2022	2021
	(In thousands of USD)			
Cash inflow (outflow) by activity				
Operating activities	$ (2,327)	$ 3,238	$ 24,518	$ 50,138
Investing activities	(28,245)	(11,464)	(74,987)	(34,633)
Financing activities	4,575	1,166	26,840	5,851
Effects of exchange rates	(1,420)	(102)	(4,244)	(1,094)
Net cash inflows (outflows)	(27,417)	(7,162)	(27,873)	20,262
Less: Net purchase of short-term investments	20,000	—	20,000	—
Net cash inflows (outflows) excluding short-term investing	(7,417)	(7,162)	(7,873)	20,262

Cash provided by operating activities

Cash used by operating activities for the three months ended December 31, 2022 was $2.3 million compared to $3.2 million cash generated for the same period in 2021. The decrease was due to a net increase in operating assets and liabilities compared to the same period in 2021, offset by the higher profit in the three months ended December 31, 2022. Cash generated by operating activities for the year ended December 31, 2022 was $24.5 million compared to $50.1 million for the same period in 2021. The decrease was due to a net increase in operating assets and liabilities, partially offset by higher profit, depreciation, share based payments and income tax expense in 2022.

Cash used in investing activities

Cash used in investing activities for the three months ended December 31, 2022 was $28.2 million compared to $11.5 million for the same period in 2021. The increase was due to an increase in the purchase of short-term investments, partially offset by a decrease in purchases of property and equipment. Cash used in investing activities for the year ended December 31, 2022 was $75.0 million compared to $34.6 million for the same period in 2021. The increase was due to the two acquisitions in 2022 and an increase in the purchase of short-term investments, partially offset by a decrease in purchases of property and equipment.

Cash provided by financing activities

Cash provided by financing activities for the three months and year ended December 31, 2022 was $4.6 million and $26.8 million compared to $1.2 million and $5.9 million for the same periods in 2021. The increase for the three months ended December 31, 2022 was due to proceeds from stock options exercised, and for the year ended December 31, 2022, the increase was due to proceeds from stock options exercised and lease incentives received.

Contractual obligations

Our lease commitments are primarily for office premises and secure data center facilities with expiry dates that range from March 2023 to February 2037. The largest lease commitment relates to our new head office in Ottawa, Canada, the lease of which commenced September 2021 and expires in 2037. Given the ongoing cash generated from operations and our existing cash and credit facilities, we believe there is sufficient liquidity to meet our contractual obligations.

In 2022, we contracted to purchase cloud data services for a minimum purchase commitment of $100.0 million over a seven-year term.

The following table summarizes our contractual obligations as at December 31, 2022, including commitments relating to leasing contracts:

	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years	Total amount
			(In thousands of USD)		
Commitments					
Lease agreements	$ 7,919	$ 8,795	$ 6,436	$ 26,736	$ 49,886
Cloud services agreements	6,706	18,125	40,000	35,000	99,831
Financial obligations					
Trade payables and accrued liabilities	40,107	—	—	—	40,107
Total contractual obligations	$ 54,732	$ 26,920	$ 46,436	$ 61,736	$ 189,824

The following table summarizes our contractual obligations as at December 31, 2021, including commitments relating to leasing contracts:

	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years	Total amount
			(In thousands of USD)		
Commitments					
Lease agreements	$ 9,475	$ 13,215	$ 7,362	$ 31,546	$ 61,598
Financial obligations					
Trade payables and accrued liabilities	43,328	—	—	—	43,328
Total contractual obligations	$ 52,803	$ 13,215	$ 7,362	$ 31,546	$ 104,926

Off-balance sheet arrangements

We have no off-balance sheet arrangements, other than variable payments related to operating leases with terms of twelve months or less (which have been included in the disclosed obligations under "Liquidity and capital resources – Contractual obligations"), that have, or are likely to have, a current or future material effect on our consolidated financial position, financial performance, liquidity, capital expenditures or capital resources.

Transactions with related parties

We did not have any transactions during the three months and year ended December 31, 2022 and 2021 between the Company and a related party outside the normal course of business.

Financial instruments and other instruments

We recognize financial assets and liabilities when we become party to the contractual provisions of the instrument. On initial recognition, financial assets and liabilities are measured at fair value plus transaction costs directly attributable to the financial assets and liabilities, except for financial assets or liabilities at fair value through profit and loss, whereby the transactions costs are expensed as incurred. The carrying amounts of our financial instruments approximate fair value due to the short-term maturity of these instruments.

Credit risk

Credit risk is the risk of an unexpected loss if a customer or counterparty to a financial instrument fails to meet its contractual obligations. Our credit risk is primarily attributable to trade and other receivables.

The nature of our subscription-based business results in payments being received in advance of the majority of the services being delivered, as a result, our credit risk exposure is low.

We invest our excess cash in short-term investments with the objective of maintaining safety of principal and providing adequate liquidity to meet all current payment obligations and future planned capital expenditures with the secondary objective of maximizing the overall yield of the investment. We manage our credit risk on investments by dealing only with major Canadian banks and investing only in instruments that we believe have high credit ratings. Given these high credit ratings, we do not expect any counterparties to these investments to fail to meet their obligations.

Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates and interest rates, will affect our income or the value of our holdings of financial instruments.

Currency risk

A portion of our revenues and operating costs are realized in currencies other than our functional currency, such as the Canadian dollar, Japanese Yen, Euro, and British Pound. As a result, we are exposed to currency risk on these transactions. Also, additional earnings volatility arises from the translation of monetary assets and liabilities, investment tax credits recoverable and deferred tax assets and liabilities denominated in foreign currencies at the rate of exchange on each date of our consolidated statements of financial position; the impact of which is reported as a foreign exchange gain or loss or as income tax expense for deferred tax assets and liabilities.

Our objective in managing our currency risk is to minimize exposure to currencies other than our functional currency. We do not engage in hedging activities. We manage currency risk by matching foreign denominated assets with foreign denominated liabilities.

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market interest rates. We believe that interest rate risk is low for our financial assets as the majority of investments are made in fixed rate instruments. We do have interest rate risk related to our credit facilities. The rates on our Revolving Facility are variable tied to Royal Bank prime rate and Royal Bank US base rate. No amounts have been drawn as at December 31, 2022.

Capital management

Our capital is composed of shareholders' equity which includes our common shares. Our objective in managing our capital is financial stability and sufficient liquidity to increase shareholder value through organic growth and investment in sales, marketing and product development. Our senior management team is responsible for managing the capital through regular review of financial information to ensure sufficient resources are available to meet operating requirements and investments to support our growth strategy. The Board of Directors of Kinaxis (the "Board") is responsible for overseeing this process. In order to maintain or adjust our capital structure, we could issue new shares, repurchase shares, approve special dividends or issue debt.

Critical accounting policies and estimates

See our annual consolidated financial statements for the year ended December 31, 2022 and the related notes thereto for a discussion of the accounting policies and estimates that are critical to the understanding of our business operations and the results of our operations.

Contingencies

We are involved in litigation with a competitor, whereby the competitor has made certain allegations concerning patent infringement. We will accrue a liability if we determine that it is more likely than not that a present obligation exists that will result in an outflow of resources and the amount of the obligation can be reliably estimated. Significant judgment is required in both the determination of probability and the determination as to whether an amount of an obligation is reliably estimable. We have assessed that our defense against these allegations will more likely than not be successful and a present obligation does not exist. At December 31, 2022, we have not recognized a liability regarding these allegations.

We are required to apply judgment with respect to any potential loss or range of loss in connection with litigation. The outcome of litigation and claims is intrinsically subject to considerable uncertainty.

Controls and procedures

Disclosure controls and procedures

The Company's Chief Executive Officer (CEO) and Chief Financial Officer (CFO) are responsible for establishing and maintaining our disclosure controls and procedures. We maintain a set of disclosure controls and procedures designed to provide reasonable assurance that information required to be publicly disclosed is recorded, processed, summarized and reported on a timely basis. Our CEO and CFO have evaluated the design and effectiveness of our disclosure controls and procedures at the end of the quarter and based on the evaluation have concluded that the disclosure controls and procedures are effectively designed.

Internal controls over financial reporting

Our internal controls over financial reporting (ICFR) are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. Our management is responsible for establishing and maintaining adequate ICFR. Management, including our CEO and CFO, does not expect that our ICFR will prevent or detect all errors and all fraud or will be effective under all future conditions. A control system is subject to inherent limitations and even those systems determined to be effective can provide only reasonable, but not absolute, assurance that the control objectives will be met with respect to financial statement preparation and presentation.

National Instrument 52-109 – *Certification of Disclosure in Issuers' Annual and Interim Filings* of the Canadian Securities Administrators requires our CEO and CFO to certify that they are responsible for establishing and maintaining ICFR and that those internal controls have been designed and are effective in providing reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS. Our CEO and CFO are also responsible for disclosing any changes to our internal controls during the most recent period that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Our management under the supervision of our CEO and CFO has evaluated the design and effectiveness of our ICFR based on the Internal Control – Integrated Framework issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission. As at December 31, 2022, management assessed the design and effectiveness of our ICFR and concluded that our ICFR is appropriately designed and there are no material weaknesses that have been identified. There were no significant changes to our ICFR for the year ended December 31, 2022.

Outstanding share information

As at December 31, 2022, our authorized capital consists of an unlimited number of common shares with no stated par value. Changes in the number of common shares, options, restricted share units, deferred share units and performance share units outstanding for the year ended December 31, 2022 and as of March 1, 2023 are summarized as follows:

Class of Security	Number outstanding at December 31, 2021	Net issued	Number outstanding at December 31, 2022	Net issued	Number outstanding at March 1, 2023
Common shares	27,462,834	589,795	28,052,629	6,215	28,058,844
Stock options	2,143,375	(423,049)	1,720,326	(7,715)	1,712,611
Restricted Share Units	96,583	84,156	180,739	(1,065)	179,674
Deferred Share Units	65,441	9,954	75,395	—	75,395
Performance Share Units	31,640	39,738	71,378	—	71,378

Our outstanding common shares increased by 589,795 shares in of 2022 due to the exercise of 492,631 stock options and vesting of 97,164 restricted and performance share units.

Our outstanding stock options decreased by 423,049 options in 2022 due to the grant of 194,646 options less 492,631 options exercised and 125,064 options forfeited. Each option is exercisable for one common share.

Our outstanding restricted share units increased by 84,156 units in 2022 due to the grant of 200,865 units less 93,388 units vested and 23,321 units forfeited. Our outstanding deferred share units increased by 9,954 units in 2022 due to 9,954 units granted. Our outstanding performance share units increased by 39,738 units in 2022 due to 52,209 units granted less 3,776 units vested and 8,695 units forfeited. Upon vesting, each share unit can be paid out or settled in cash, an equivalent number of common shares, or a combination thereof, as elected by the Compensation Committee of the Board.

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