

# EQUITY RESEARCH

August 17, 2022

Company Update

## TELUS INTERNATIONAL (CDA) INC.

Leading The Crowd: A Look At Data Annotation

### Our Conclusion

TELUS International (TI) has seen solid growth despite an uncertain macro-economic environment. We believe that a portion of this growth has been derived from its AI Data Solutions business. The data annotation business is seeing strong industry growth (32% CAGR through 2027E), market share gains (vs. primary competitor Appen) and is benefiting from its ability to cross-sell into its tech and games customer base. If TI is able to maintain its current market share as the market grows, the data annotation division could generate in excess of \$1.75B in revenue by 2027E. We maintain our Outperformer rating on TELUS International and \$39 price target.

### Key Points

**A Critical Component Of AI Models:** The process of data annotation involves the categorization and labelling of data to ensure that an AI or machine-learning algorithm is being trained on high-quality, relevant data that is free of bias and up-to-date. In order for AI models to perform as intended, the algorithms also need to be evaluated after release to ensure they are working as expected.

**Few Public Competitors:** The processes of data annotation and model review rely on human input. To date, we believe that the majority of data annotation has been done internally at the hyperscalers. However, we see annotation as a relatively easy task to outsource, freeing up internal employees for more complex work. Given growth in the use of AI models and the explosion of data they can digest, we expect data annotation outsourcing to continue to grow. TI has one large public competitor (Appen), with several smaller firms also competing in the market. Traditional BPOs (business process outsourcing providers) typically do not provide annotation as a stand-alone service given a captive (vs. crowdsourced) workforce, which requires more predictable utilization.

**A Nascent Market:** Data labelling was a \$4B market in 2021 according to a Cognilytica Research report, but is expected to grow at a 34% CAGR through 2027E. We estimate that TI has roughly an 8% market share and see significant upside if TI is able to grow its revenue in line with the market.

**Winning Share From Its Primary Competitor:** TI appears to be winning share from Appen, its primary public competitor. Appen saw revenue decline 7% in H1, while TI saw double-digit growth in its AI Data Solutions division. Given a similar customer base and offering, we assume that TI has been winning share from Appen, with TI well positioned to cross-sell data solutions into its tech and games customer base.

**Area Of Future M&A:** We see M&A opportunities within the data annotation market, including targets that can help TI improve the efficiency of its crowdsourced workforce or add additional features (analytics, etc.). At the end of Q2, TI had available liquidity of \$911MM.

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### Outperformer

TIXT-NYSE, Sector: Information Technology

Current Price (8/16/22): US\$30.99

Price Target (12-18 mos.): US\$39.00

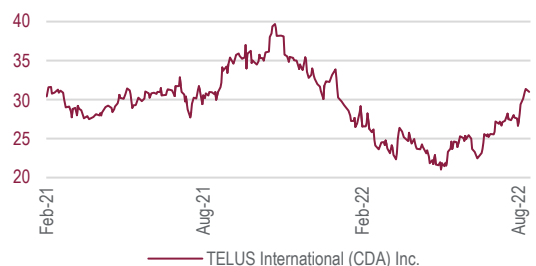
### CIBC Estimates and Valuation

(Dec. 31)	2020	2021	2022	2023
Adj. EPS	0.71A	1.01A	1.20E	1.52E
Adj. EBITDA(mln)	394.9A	540.0A	621.1E	731.5E
Adj. EPS	Q1	Q2	Q3	Q4
2022	0.26A	0.30A	0.31E	0.34E
2021	0.23A	0.24A	0.26A	0.28A
Adj. EBITDA(mln)	Q1	Q2	Q3	Q4
2022	142.0A	150.0A	156.7E	172.3E
2021	129.0A	131.0A	137.0A	143.0A
Valuation	2020	2021	2022	2023
P/E	43.7x	30.7x	25.8x	20.4x
EV/EBITDA	18.2x	13.3x	11.6x	9.8x

### Stock Performance and Key Indicators

Avg. Dly. Vol.:	78K	Shares O/S:	259.3M
Market Cap.:	US\$8,037M	Float:	228.5M
52-wk Range:	US\$21.06 - US\$39.69	Div. / Yield:	NIL/NIL

### TIXT-NYSE



(Source: FactSet)

All figures in US dollars unless otherwise stated.

Please see "Price Target Calculation and Key Risks to Price Target" information on page 8.  
For required regulatory disclosures please refer to "Important Disclosures" beginning on page 9.

**TELUS International (CDA) Inc. (TIXT-NYSE) — Outperformer**

Price (8/16/22) US\$30.99 12-18 mo. Price Target US\$39.00

Sector: Information Technology

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Key Financial Metrics	2020	2021	2022E	2023E
Sales Growth	60.0%	32.6%	17.7%	15.0%
Per Share Data	2020	2021	2022E	2023E
Diluted EPS	0.46	0.30	0.70	0.93
Adj. EPS Dil.	0.71	1.01	1.20	1.52
Wgt Avg # of Shares	224.2	261.7	266.0	266.0
FD Number of Shares	225.5	264.2	269.0	269.0
Income Statement	2020	2021	2022E	2023E
Revenue	1,582	2,194	2,582	2,971
Cost of Goods Sold	649	0	0	0
Gross Profit	1,006	2,194	2,582	2,971
Tot Operating Exp	626	1,752	2,010	2,278
OpEx (% of Revenue)	39.55%	79.85%	77.85%	76.69%
Adj. EBITDA	395	540	621	731
Adj EBITDA Margin	25.0%	24.6%	24.1%	24.6%
Net Income	103	78	187	250
Adjusted Net Income	160	267	324	408
Adjusted Net Margin	10.1%	12.2%	12.5%	13.7%
Cash Flow Statement	2020	2021	2022E	2023E
Net CFO	263	282	578	353
Capex	(59)	(99)	(104)	(120)
Free Cash Flow	204	183	474	233
Balance Sheet	2020	2021	2022E	2023E
Cash & ST Investment	152	115	276	94
Intangible Assets	1,294	1,158	980	808
Goodwill	1,500	1,380	1,327	1,327
Total Assets	3,745	3,626	3,608	3,448
ST Int-Bearing Debt	92	328	318	318
LT Int-Bearing Debt	1,673	820	593	265
Total Liabilities	2,634	1,971	1,805	1,394
Shareholders' Equity	1,111	1,655	1,805	2,055
Tot Liab & SE	3,745	3,626	3,610	3,449

Source: FactSet, Company Reports &amp; CIBC World Markets Inc.

**Company Profile**

TELUS International is a provider of multilingual digital customer experience and digital IT solutions to global clients.

**Investment Thesis**

TI's focus on digital services and high-growth verticals provides a long runway for growth as the company improves its digital offerings and expands within the customer base.

**Price Target (Base Case): US\$39.00**

Our Price Target is calculated using 15% revenue growth, 24.6% EBITDA margins and a 15.0x EV/EBITDA multiple

**Upside Scenario: US\$50.00**

Our upside scenario is calculated using 20% revenue growth, 25.0% EBITDA margins and a 18.0x EV/EBITDA multiple

**Downside Scenario: US\$20.00**

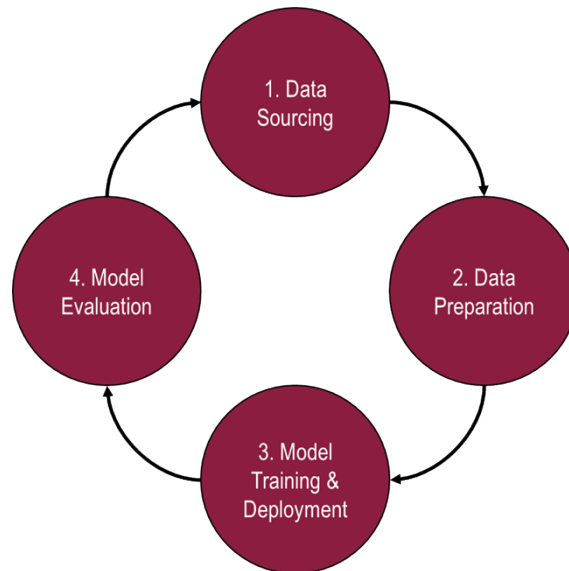
Our downside scenario is calculated using 10% revenue growth, 19.5% EBITDA margins and a 11.0x EV/EBITDA multiple



## What Is Data Annotation

Data annotation is best explained as a critical step in building a scalable artificial intelligence model. In order to ensure that models are both built correctly and performing as designed after they are deployed, models need to be trained and re-evaluated with reliable, annotated data. Importantly, the processes of data annotation and model review are unable to be automated themselves and rely on human input or what is known as a “human-in-the-loop” process. Appen – TI’s primary competitor in the space – breaks the data annotation lifecycle into four distinct phases, as outlined in the diagram in Exhibit 1 below.

**Exhibit 1: Data Annotation Lifecycle**



Source: Appen and CIBC World Markets Inc.

We think of data annotation as the foundation of scalable artificial intelligence (AI) or machine-learning models (ML). In order for AI or ML to continuously function as designed in a production environment, the algorithms need to be extensively trained with sample data and evaluated after release to ensure consistency and avoid model drift. In training an algorithm, the quality of the training data is critical, with poor data inevitably leading to a low-quality algorithm. As a programmer might put it: Garbage In, Garbage Out.

Specifically, data annotation involves the categorization and labelling of data to ensure that an algorithm is being trained on high-quality, relevant data. Annotators take a set of predefined criteria and labelling standards provided by the algorithm owners, and apply that criteria to a large data set. Exhibit 2 shows an example of annotated text that could be used to train a search algorithm to provide accurate results. A team of annotators would be responsible for labelling the content of the training text so an algorithm will eventually be able to recognize similar characteristics in live data and deliver accurate results. With language constantly evolving, a search algorithm will need to be frequently evaluated and re-trained to ensure that it is delivering accurate results. This need for frequent re-training and evaluation gives a recurring aspect to data annotation work, particularly amongst hyperscaler clients.

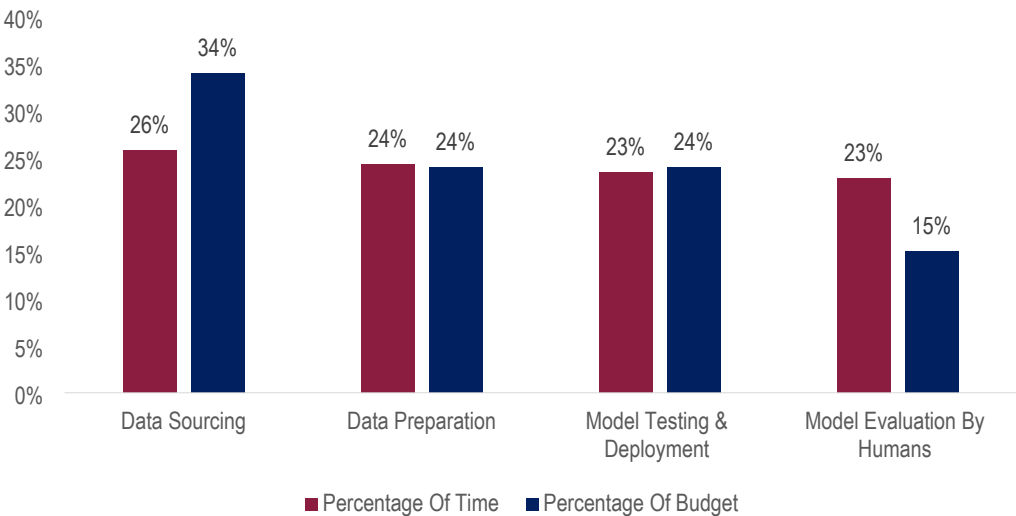
Exhibit 2: TIXT Training Data Example



Source: Company reports

In terms of budget allocation, sourcing high-quality relevant data is the most expensive component of the AI life cycle, as found by a Harris Poll conducted in partnership with Appen. Interestingly, the time spent in each phase of the life cycle was found to be relatively even, while a larger percentage of a budget is allocated to data sourcing than to model evaluation by humans. The even split between stages of the lifecycle underscores the value that third-party annotation and labeling providers can add as they can handle the human-in-the-loop sourcing, preparation and evaluation that make up 75% of the life cycle.

Exhibit 3: AI Lifecycle – Time Spent Vs. Budget Allocation, 2022



Source: Harris, Appen and CIBC World Markets Inc.

It is important to understand where data annotation fits into the AI lifecycle, and where the major players in the data annotation market are positioned to add value. Given the combination of the high volume of annotated data required to train models and the relatively low skill levels required to perform labeling and annotation work, a crowdsourced model where non-employee contractors are paid hourly for their work is generally viewed as the most effective delivery model. For this reason, traditional business process outsourcing providers (BPOs), whose captive workforces require more predictable utilization and are less suited for annotation work, typically do not provide annotation as a standalone service.

One of the challenges of operating a crowdsourced model is attracting, managing and retaining a diverse crowd of annotators. The difficulty in developing a platform to manage a crowd workforce and the best practices necessary to effectively utilize the crowd give a leg

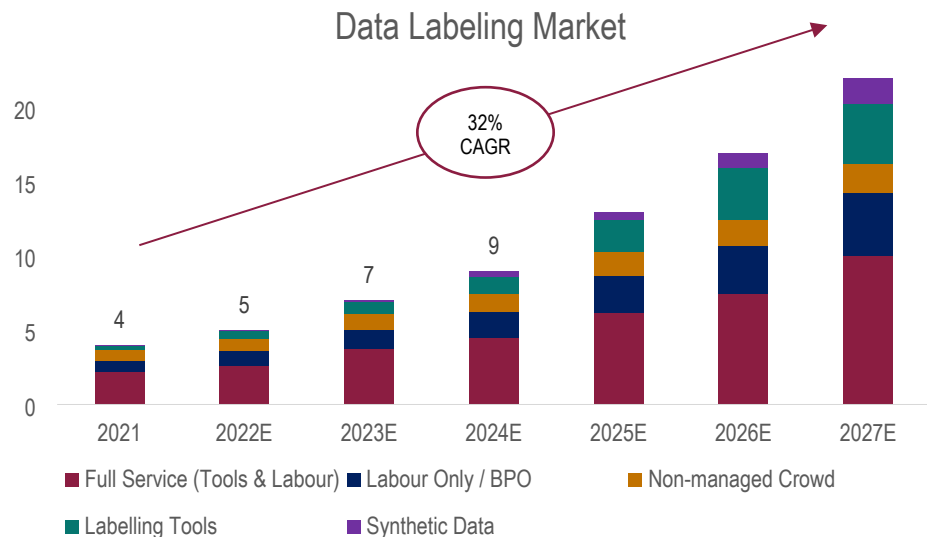
up to first movers and incumbents in the market. While we do not expect BPO peers to remain on the data annotation sidelines forever, the first-mover advantage for TI and other scaled providers of annotation should allow them to maintain and grow market share as the market grows.

## Capitalizing On A Growing Market Opportunity

A report from research firm Cognilytica forecasts the outsourced data labeling market to grow at a 32% CAGR over the next six years, increasing in size from \$4 billion to \$22 billion as the usage of large-scale AI models expands beyond the global hyperscalers and becomes commonplace in a number of industries. While the market forecast is by no means definitive, we argue that is a helpful benchmark to understand the opportunity at hand.

Growth in the data labeling market is also expected to come from spending that is currently done in-house as labeling needs begin to exceed the capacity of internal teams. The core hyperscaler players are still performing some portion of annotation work in-house, and we see the potential for additional outsourcing of annotation work as supportive of the growth in outsourced spending.

**Exhibit 4: Data Labeling Forecast, 2021 – 2027E (US\$B)**



Source: Cognilytica Research, Appen, and CIBC World Markets Inc.

We view TELUS International, Appen and Scale as the only data annotation providers with sufficient scale in their crowdsourced workforces to meet the needs of the hyperscaler customers that make up the majority of the current data labeling market. Based on Appen's publicly available revenue figures and TI's disclosure of Lionbridge's 2020 revenue at the time of acquisition, we arrive at the ~8% general market share assumption for TI, as noted in the table in Exhibit 5.

**Exhibit 5: Data Annotation – Primary Competitors, 2021**

	2021 Revenue (\$USD)	CIBCe Market Share	2022 H1 Growth	2021 EBITDA Margins
Appen	\$447	11%	-7%	17%
TIXT/Lionbridge*	\$300+	8%	40%	~22%
Scale**	\$100	3%	NA	NA
<b>Top 3 Players</b>	<b>~\$850</b>	<b>21%</b>		

\*TIXT 2021 revenue estimated at 26% Y/Y growth, in line with prior year level.

\*\*Scale revenue based on company disclosures at October 2021 fundraise.

Source: Company reports and CIBC World Markets Inc.

If TI was to hold its market share of 8% as the market grew, we calculate AI Data Solutions would generate in excess of \$1.75 billion in revenue by 2027E. To provide an idea of the range of potential data annotation revenue for TI, we ran a sensitivity analysis on the pace of market growth and TI's ability to hold share as the market grows. Results of the sensitivity analysis are included in the table in Exhibit 6.

**Exhibit 6: TI Data Annotation Revenue Opportunity, 2027E**

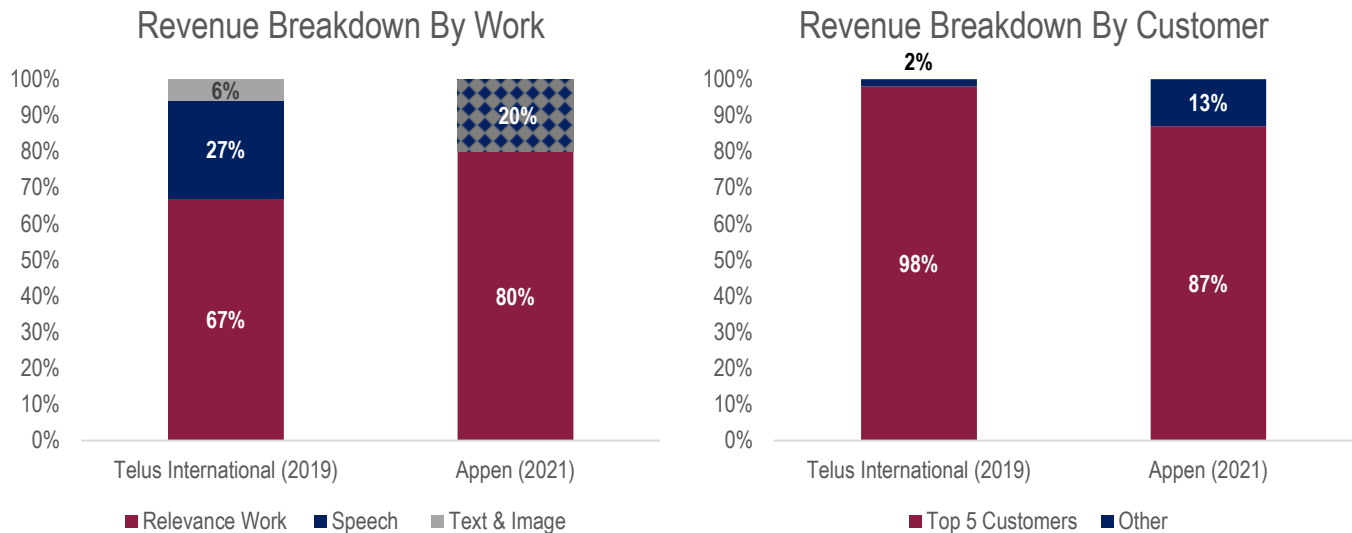
		Data Labeling Market CAGR				
		15%	20%	25%	30%	35%
TI Market Share	5%	463	597	763	965	1,211
	6%	555	717	916	1,158	1,453
	7%	648	836	1,068	1,352	1,695
	8%	740	956	1,221	1,545	1,937
	9%	833	1,075	1,373	1,738	2,179

Source: Company reports, FactSet and CIBC World Markets Inc.

**Appears To Be Winning Share Against Appen**

Commentary on TI's most recent earnings call suggested that TI's AI Data Solutions group was growing at a 40% Y/Y pace, while Appen's revenue growth decelerated by 7% in H1. We believe that Appen and TI share the same hyperscaler customers and have similar product offerings.

Roughly 80% of Appen's 2021 revenue came from model evaluation (model testing/relevance). This work involves validating real-world model performance across a range of use cases, such as the relevance of a search algorithm or advertising delivery. TI also generates a majority of its revenue from relevance work, although the weighting is not as significant. The bar graphs in Exhibit 7 illustrate a comparison of Appen and TI's revenue breakdown.

**Exhibit 7: TELUS International & Appen – Revenue Breakdown, 2019 – 2021**

Source: Company reports and CIBC World Markets Inc.

With a similar product mix and the same five to six major customers, we believe that TI is winning current market share from competitors like Appen.

We view TI as particularly well positioned to win market share in the short term given its existing relationships with the hyperscaler customers. With TI already providing other important content moderation and digital CX services to leading global technology and gaming players, the ability to consolidate vendors and build off of existing relationships should offer a major leg up when it comes to winning share.

That said, as the market grows, we expect to see additional competition, potentially from BPOs and/or (currently) sub-scale players, making outsized market share gains more difficult.

### **An Area Of Future M&A**

TI had \$911 million in available liquidity at the end of Q2 and continues to look for M&A opportunities. We see data annotation as a potential area of future M&A, with TI's last two deals (Playment, Lionbridge) focused on building out its AI Data Solutions division.

In May 2022, Appen press released that it had received an acquisition offer from TELUS International. TELUS International rescinded the offer shortly after, citing a lack of cultural alignment between the two organizations. While that deal may have fallen through – and commentary from management suggests that it is unlikely to be revived – it does raise the question of how TI might look to bolster its annotation business via acquisition. An acquisition of Appen would have taken out TI's largest competitor, increased the size of its crowd workforce and given TI access to Appen's proprietary annotation platform and tools.

Going forward, we expect that a TI data annotation acquisition would resemble its June 2021 acquisition of Playment. While immaterial from a revenue perspective, Playment added computer vision capabilities and fully managed annotation services that included a platform that transforms videos and images into high-quality annotated data. When rolled out to the TI annotator workforce, the Playment platform increased annotator productivity by as much as five times, enhancing TI's value to customers. We believe that future acquisitions will focus on capability enhancements that can be rolled out across the entire annotation workforce, rather than deals that simply increase the scale of TI's crowd workforce. TI has always remained confident in its ability to attract and maintain its crowd, making it unlikely that it would focus on scaling its crowdsourced workforce through M&A.

## Price Target Calculation

We derive our price target of \$39.00 by applying a 15.0x EV/EBITDA to our 2023E EBITDA estimate based on the current capital structure. The 15.0x multiple is a blended average of Digital Services, BPOs and IT services peers.

## Key Risks To Price Target

The primary risks to our price target include the following: 1) risks related to the concentrated customer base; 2) an increase in employee attrition rates; 3) litigation related to the working conditions for content moderation team members; 4) challenges in integration future acquisitions; and 5) increased competition from well-capitalized peers.



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