

CTOS Digital Berhad (CTOS MK)

Credit Analytics Leader

Initiate with BUY, TP MYR2.17

CTOS Digital is the leading credit rating agency (CRA) and credit-related data solutions provider in Malaysia, with over 70% market share. Strong organic growth potential is underpinned by new verticals, especially upside from pending launch of digital banks, while inorganic expansion is happening in parallel per the acquisition of stakes in Basis Corporation (Basis) and Business Online (BOL), notable credit rating companies in Malaysia and Thailand, respectively. These partnerships, in our view, are synergistic to the overall group operating footprint and will facilitate accelerated expansion within ASEAN. We initiate coverage with a BUY and MYR2.17 TP, based on a peer basket-comparable 2.6x FY22 PEG multiple.

Geared for growth

Having established itself as the largest digital credit solutions player in Malaysia, CTOS is pursuing aggressive IT and data analytics innovations that have enabled expansion of its core big data product suite (specifically relating to consumer and business credit) via new offerings such as eKYC, IDGuard, eTR, and CAD, which aim to service the entire range of a customer's credit offering lifecycle. Broadly, digitization of credit data and analytics in the form of VAS enhances the stickiness of the customer base and enhance CTOS' user acquisition efforts with minimal CAC, while boosting its ARPU. New verticals where CTOS is well-positioned to deliver rapid growth include tenant screening, used vehicles and digital banks.

Digital Banking proxy

CTOS' established digital credit solutions product suite enables the efficient sourcing for big data and credit profiling that is critical for cost and time-constrained digital banks (DB) re processes like eKYC. DB daily operations and platform growth are powered by leveraging big data and AI capabilities to optimize user acquisition and grow the ecosystem - these needs effectively position CTOS as a key partner and enabler for this new industry vertical. The underserved market, where DB's will initially focus, typically comprises of higher credit risk customers. BNM is currently in the final stages of deciding on the recipients of the five DB licenses - winners will likely be announced in 4Q21, with operational launches in FY22.

3-year core net profit CAGR of 28%

We forecast a robust 3-year core net profit CAGR (FY20-23E) of 28%. This assumes a 5-10% annual growth in customers/accounts and 5-15% annual growth in average revenue per customer/account, across its 3 key customer segments. We also see parallel progressive margin improvement, from 30% in FY20, to 40% from FY23E. A high-growth company with strong secular growth potential, we value CTOS on PEG, with the applied 2.6x multiple being in-line with global peer median (Fig 32).

FYE Dec (MYR m)	FY19A	FY20A	FY21E	FY22E	FY23E
Revenue	129	140	161	186	213
EBITDA	48	51	62	82	95
Core net profit	39	41	55	72	86
Core EPS (sen)	1.8	1.9	2.5	3.3	3.9
Core EPS growth (%)	33.1	5.0	31.5	31.4	20.0
Net DPS (sen)	1.0	0.5	1.5	2.0	2.3
Core P/E (x)	na	na	74.6	56.8	47.3
P/BV (x)	na	na	13.1	12.0	10.9
Net dividend yield (%)	na	na	0.8	1.1	1.3
ROAA (%)	71.6	21.6	15.9	19.3	21.2
EV/EBITDA (x)	84.8	79.4	64.4	48.5	41.2
Net gearing (%) (incl perps)	nm	net cash	net cash	net cash	net cash
Consensus net profit		-	50	73	89
MKE vs. Consensus (%)	-	-	9.3	(1.1)	(3.1)

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BUY

Share Price

MYR 1.85

12m Price Target

MYR 2.17 (+17%)

Company Description

CTOS Digital is a credit rating agency, principally involved in the business of credit reporting, digital related services, and investment holding.

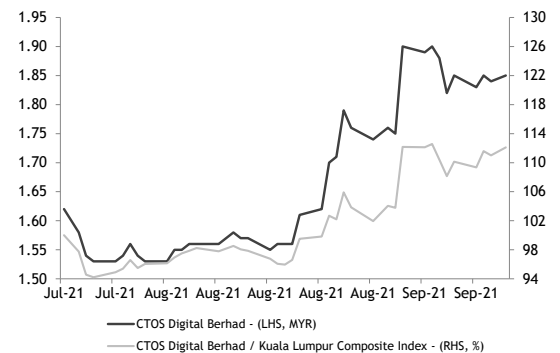
Statistics

52w high/low (MYR)	na/na
3m avg turnover (USDm)	14.5
Free float (%)	50.9
Issued shares (m)	2,200
Market capitalisation	MYR4.1B USD976M

Major shareholders:

Inodes Ltd.	40.0%
CHUNG TZE KEONG	4.5%
CHUNG TZE WEN	4.5%

Price Performance



	-1M	-3M	-12M
Absolute (%)	19	na	na
Relative to index (%)	17	na	na

Source: FactSet

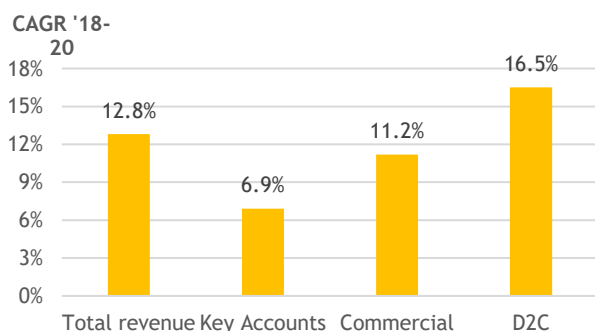
Abbreviations

ARPU: Average Revenue per Unit (customer)
 CAC: Customer Acquisition Cost
 BNM: Central Bank of Malaysia
 D2C: Direct-to-consumer
 PEG: Price-to-Earnings-Growth
 B2B: Business-to-Business
 P2P: Peer-to-peer
 SaaS: Software-as-a-Services.
 eTR: Electronic Trade Reference
 CED: CTOS Enhanced Database
 eKYC: Electronic Know-Your-Customer
 DB: Digital Bank
 AI: Artificial Intelligence
 UI/UX: User Interface/ Experience

Value Proposition

- CTOS Digital is the market leading credit reporting agency in Malaysia with a 71.2% revenue market share in 2020, while 20%-owned BOL is the largest company information bureau in Thailand, with an estimated 59% market share.
- With over 30 years of experience, the company has an extensive database of about 15m consumer profiles and 8m company and business profiles. CTOS Digital is said to have one of the largest trade reference databases in Malaysia.
- CTOS Digital caters to three types of customers: Key Accounts, Commercial and Direct-to-Consumer (“D2C”). The group have 430 Key Accounts, 17,000 commercial customers and 1.4 million users registered for a CTOS ID account.

2-year revenue CAGR (2018-2020) by customer type

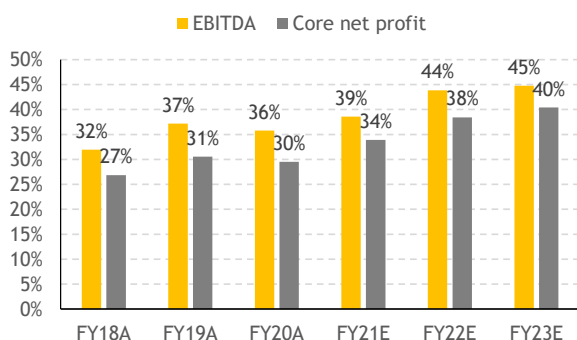


Source: CTOS Digital

Financial Metrics

- We project a 3-year (FY20-FY23E) core net profit CAGR of 28%, driven primarily by growth across all customer segments and average revenue per customer (i.e. from new offerings, new verticals, more value-added products).
- Our forecasts have imputed annual customer/account growth of +5-10% YoY.
- We expect profit margins to improve as the group is able to enjoy greater economies of scale (i.e. improving revenue and relatively stable costs).
- 60% dividend payout policy with low capital expenditure (“capex”) requirements. Free cash flow generation is estimated to range between MYR51m-87m in FY21-FY23E.

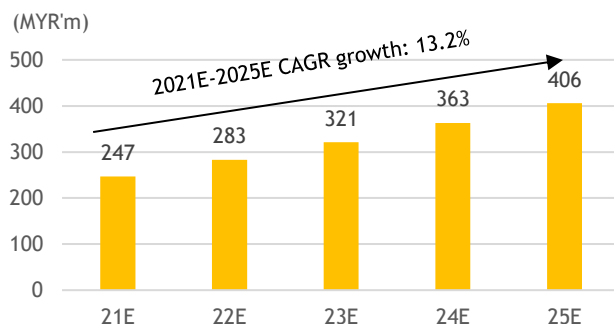
EBITDA and core net profit margins (FY18-FY23E)



Source: CTOS Digital

Industry outlook

IDC’s projected growth in Malaysia’s reporting industry



Source: Company, Maybank Kim Eng

- According to IDC Market Research (Malaysia) Sdn Bhd (“IDC”), the revenue of the credit reporting industry in ASEAN totalled MYR991m in 2020.
- IDC estimates the size of Malaysia’s credit reporting industry to be MYR225m in 2020 (i.e. 23% the size of the ASEAN market).
- The domestic market expanded at a 5-year CAGR (2016-2020) of 12.9%, and IDC predicts that it will continue to grow in revenue at a 5-year CAGR (2021E-2025E) of 13.2%.
- IDC projects a 2021E-2025E revenue CAGR of 28.2% in respect of Malaysia’s total addressable market. High growth sectors with a CAGR of 40% from 2016-2025E would be automotive, media technology, insurance, real estate, retail and healthcare.

Swing Factors

Upside

- Greater marketing efforts amid an improved economic situation would drive accounts growth.
- The launch of new digital solutions and the penetration of new sectors will spur faster adoption and demand for CTOS Digital’s services.
- Expansion into new regional markets or potential synergistic M&As that could further broaden the group’s reach and market share.

Downside

- Slower-than-expected economic growth, particularly as a result of an extended COVID-19 pandemic that leads to more severe lockdowns, as this would negatively impact demand, particularly from SMEs.
- Breaches in security/compliance that could result in the revocation of its CRA Certificate or breaches to the Personal Data Protection Act.
- The entry of new players into the credit reporting space that could eventually erode the group’s market share.

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Investment thesis

Introduction

Founded in 1990, CTOS Digital has expanded over the years to become Malaysia's undisputed market leading Credit Reporting Agency ("CRA") with a 71.2% revenue market share in 2020. It owns a 26% stake in Malaysia's second largest CRA, Experian, which has a 17.5% domestic market share. Its acquisition of 100% stake in Basis expanded CTOS' range of international business reports and provided the group base of international customers across APAC and Europe. Meanwhile, 22.65%-owned Business Online PCL ("BOL") is the largest company information bureau in Thailand, with an estimated 59% market share in 2020. BOL is listed on the Stock Exchange of Thailand.

Competitive edge

In a domestic market where there are seven Credit Reporting Agencies, barriers to entry are high. In an industry where data completeness and data integrity are critical, the company's database, accumulated over 30 years, is extensive with about 15m consumer profiles and 8m company and business profiles. CTOS Digital is said to have one of the largest trade reference databases in Malaysia. According to IDC, none of its competitors can offer the full suite of digital solutions that CTOS Digital offers. It has a comprehensive ecosystem of credit management solutions and a fully digital platform for end-to-end credit management across the various stages of the customer lifecycle.

The earnings growth drivers

Earnings growth in the near future will be driven predominantly by the extension of its ecosystem of credit management solutions as the group continues to invest in two key areas: IT capabilities and data & analytics. The group also intends to expand into new sectors, specifically automotive, real estate and insurance and this will be aided by the deepening and broadening of its data sources. Future M&As are possible and CTOS Digital will be selective with its expansion strategy in ensuring that such inorganic acquisitions value accretive to the group. CTOS digital credit solutions enables efficient sourcing for big data and credit profiling that digital banks require both from cost and time standpoint, such as eKYC. The underserved market, where DB naturally focus on, typically comprises of higher credit risk customers. At this juncture, BNM is on the verge of deciding the recipients of these five DB licenses, likely announced in 4QFY21, while official launches expected in FY22.

Risk factors

CTOS Digital's credit reporting business is regulated by the CRA Act, for which it requires a yearly renewable CRA Certificate. Failure to renew would have an adverse effect on its ability to carry on operations. Moreover, legal, regulatory or contractual liabilities could come from failure to comply with the Personal Data Protection Act ("PDPA") in Malaysia and Thailand (via BOL). Given its leading market position in both Malaysia and Thailand, there are possible restrictions arising from competition regulations on CTOS Digital's potential acquisitions and strategic investments. Additionally, the success of its business is very much dependant on the integrity and reliability of its information database.

Valuations

Our PEG-led TP of MYR2.17 implies FY22E PER of 66x. The PER premium reflects CTOS' superior 2-year (FY21-23E) core net profit CAGR of 26%, vs its peers (Mean: 21%, Median: 15%). Given CTOS' strong secular growth outlook, we believe PEG is the most appropriate valuation methodology for this high-growth company. Per Fig 32, CTOS' peer basked median PEG as calculated on FY21-23E CAGR and FY22E PER is estimated at 2.6x (mean: 3.0x) - we apply this multiple to CTOS' FY22E EPS of 3.3 sen to arrive at our TP.

Business overview

Over 30 years in business

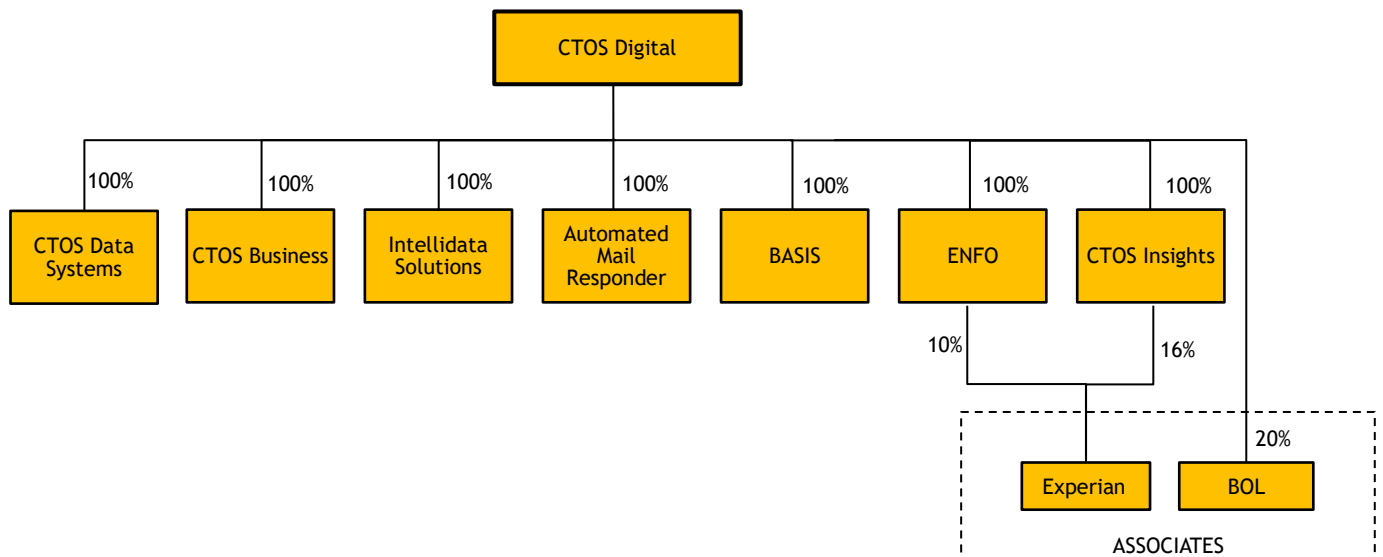
CTOS Digital’s history traces back to 1990 when its founders and brothers Chung Tze Keong (aged 65) and Chung Tze Wen (aged 62), started the credit reporting business under CTOS Sdn Bhd, which was to provide fax-based enquiries services for domestic banks.

The business is backed by Creador, a Malaysian mid-market private equity fund, which acquired a 70% stake back in 2014, through Inodes Ltd, and the shareholding has since been raised to 80% pre-IPO, while post-IPO stake stands at 40%. Over the past six years, Creador is credited for having expanded CTOS Digital’s commercial base, increased its share of wallet with its Key Accounts customers, penetrated new verticals and new capabilities, and expanded its presence into new markets.

Today, CTOS Digital is a leading Credit Reporting Agency (“CRA”) both in Malaysia and Thailand [through 22.65%-owned associate Business Online PLC (“BOL”)]. As a CRA, CTOS Digital provides credit information and analytics digital solutions on companies, businesses and consumers for use by banks and businesses, while providing credit information and analysis to consumers.



Figure 1: Corporate structure



Source: Company

Figure 2: Description of subsidiaries and associates

Name	Principal business activity and description
CTOS Data Systems Sdn Bhd ("CTOS Data Systems")	<p>Credit reporting agency and other related activities. It was incorporated in 1992 to directly integrate its database with the systems of some financial institutions. It received its CRA Certificate registering the company as a CRA in April 2014.</p> <p>CTOS Data Systems obtained MSC Malaysia Status from Malaysia Digital Economy Corporations Sdn Bhd ("MDEC") in Nov 2016 and pioneer status from Ministry of International Trade and Industry ("MITI") in Dec 2017. The pioneer status is effective to 8 Nov 2021 and is subject to renewal.</p>
CTOS Business Systems Sdn Bhd ("CTOS Business")	Software development and other related services.
Intellidata Solutions Sdn Bhd	Outsourcing and training services
Automated Mail Responder Sdn Bhd	Dormant. It was initially incorporated to provide e-mail hosting, web hosting and internet services.
CTOS Basis Sdn Bhd ("BASIS")	Credit reporting agency, focusing on comprehensive commercial credit reports. Acquired in Jan 2021, BASIS has expanded the group's range of international business reports and provides a complementary base of international customers in industries in Asia Pacific and Europe such as insurance, services and credit reporting. 85% of BASIS' FY20 revenue was generated from its international customers.
Experian Information Services (Malaysia) Sdn Bhd ("Experian")	Credit reporting and information services in which CTOS Digital acquired a 26% stake in Jul 2019. Was previously known as RAM Credit Information Sdn Bhd. The remaining 74% is held by Experian Malaysia Sdn Bhd. The company is associated with Experian plc, a multinational information services company. In addition to credit reports and credit monitoring services, it offers various decisioning and analytics solutions.
Business Online Public Company Limited ("BOL")	<p>BOL is listed on the Stock Exchange of Thailand. On 28 Oct 2020, CTOS Digital acquired a 20% stake in BOL, followed by another 2.65% stake on 6 Aug 2021. BOL is a service provider and developer of local and global financial information systems, online and offline business information service provider and prover of consulting service, debt collection service and database management.</p> <p>Other shareholders are Advanced Research Group Co Ltd (16.42%), Min Intanate (10.88%), Dun & Bradstreet International (8.68%), Visnu Skulpichetrat (7.5%), Bangkok Bank Public Company Limited (4.00%), Pan Pacific Consultant Co. Ltd. (3.72%), Parinya Khancharoensuk (2.68%), UBS AG London Branch (2.26%), Harkishin Tanwani (2.19%) and others (21.67%).</p>

Source: Company

The market leader in Malaysia & Thailand

Today, CTOS Digital is the undisputed market leading CRA in Malaysia, with a 71.2% revenue market share in 2020, according to IDC Market Research (Malaysia) Sdn Bhd's Independent Market Research ("IMR") Report. The second largest CRA in Malaysia is in fact 26%-owned Experian, with a 17.5% market share.

Meanwhile, 22.65%-owned BOL is the largest company information bureau in Thailand, with an estimated 59% market share in 2020, according to IDC. Listed on the Stock Exchange of Thailand, BOL is principally a service provider and developer of local and global financial information systems. It is an online/offline business information service provider, as well as a provider of consulting services, debt collection services and database management.

Three types of customers

CTOS Digital caters to three types of customers: Key Accounts, Commercial and Direct-to-Consumer (“D2C”).

Key Accounts

CTOS Digital currently have approximately 430 Key Accounts, all of which are located in Malaysia, in industries such as financial services, telecommunication, insurance and fintech (e.g. P2P lenders and e-commerce platforms). 75% of the revenue from Key Accounts is recurring under fixed term contracts of one to three years in duration.

CTOS Digital provides customised solutions to meet these customers’ requirements and integrates these digital solutions into their technology platforms in accordance with their business requirements. Revenue is also generated from various licence, set-up and maintenance fees for its digital solutions.

Commercial customers

CTOS Digital have approximately 17,000 commercial customers both local and international clients across Asia Pacific and Europe.

The bulk of these customers are SMEs, which accounted for 92.4% of Commercial revenue in FY20. An SME is defined as (i) a manufacturing company with annual sales turnover of less than RM50m or less than 200 full-time employees; or (ii) a company in the services and other sector with annual sales turnover of less than RM50m or less than 75 full-time employees.

Revenue comprises mainly subscription fees for access to the group’s digital platforms i.e. CTOS Credit Manager and CTOS Basis, as well as customer management modules. CTOS Digital also generates revenue from the sale of additional digital solutions and services, which include access to its eTR database and trade reference profiles, as well as the purchase of various domestic and international business reports.

Direct-to-Consumer (D2C) customers

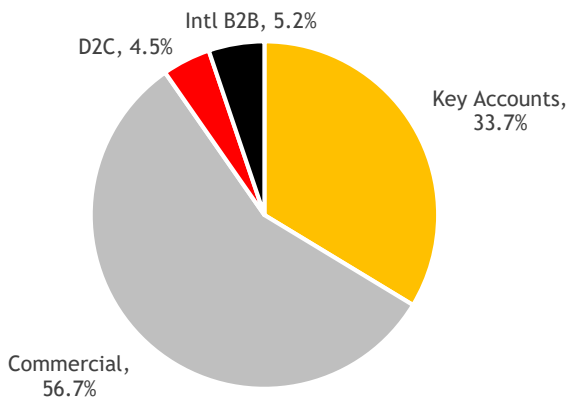
D2C customers are Malaysian consumers and revenue is generated primarily through the sale of MyCTOS Score Reports through its website and through authorised reseller agents.

CTOS Digital provides them with credit scores, CCRIS information, as well as other information such as directorships and business interests, litigation cases and trade references. As of 2Q21, CTOS have more than 1.4 million users registered for a CTOS ID account which allows users access to CTOS Consumer Scores and credit information.

International B2B

Revenue from international B2B customers comprised revenue from 51%-owned CIBI Information Inc (“CIBI”, a credit information bureau in the Philippines) which was acquired in June 2020. However, as a result of the COVID-19 pandemic and its impact on the Philippines economy, the company is currently loss-making. Management is of the opinion that CIBI requires more capital investments and better positioning in the Philippines. As such, the company will soon be removed from the group by way of a dividend-in-specie distribution to CTOS Digital’s shareholders. Following the distribution, the company will cease to be a subsidiary. CTOS Digital may re-evaluate CIBI for re-investment at a later stage.

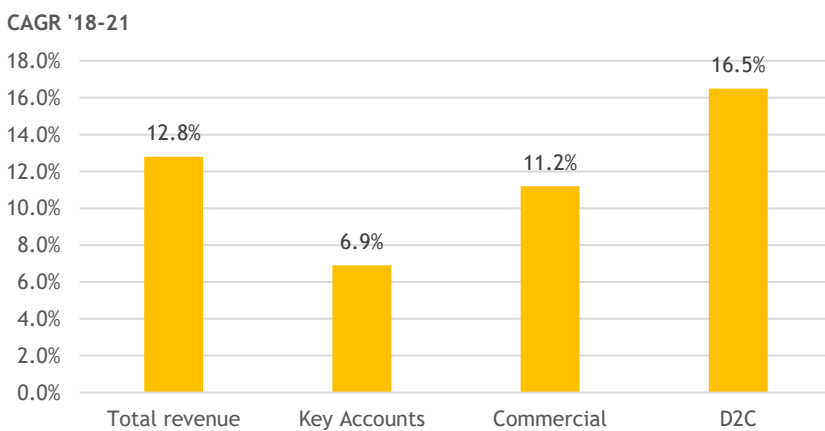
Figure 3: Revenue contribution by customer type (FY20)



Source: Company

Against a 2-year (2018-2020) revenue CAGR of 12.8%, growth has been propelled by the D2C segment which has seen a revenue CAGR of 16.5% over the same period, versus 11.2% for Commercial and 6.9% for Key Accounts. In FY20, the group’s top five major customers, all of whom with long-standing relationships of 8-19 years, contributed to just 14.2% of total revenue.

Figure 4: 2-year (2018-2020) revenue CAGR by customer type



Source: Company

A sizeable database

With over 30 years of experience, CTOS Digital today has a database profile on about 15 million consumers as well as 8 million companies and businesses. The information is obtained from:

- Public sources e.g. domestic governmental organisations, public court listings, publications and gazettes. Governmental organisations include the Department of Insolvency, Federal Government Gazettes and the National Higher Education Fund. Government agency sources include Bank Negara Malaysia (“BNM”) and the Companies Commission of Malaysia (CCM).
- An international data pool, which is sourced from BASIS’ network of global data partners.
- Proprietary databases e.g. CTOS Electronic Trade Reference (eTR), eTR Plus and CTOS Enhanced Database (“CED”). CTOS Digital’s trade reference database is one of the largest in Malaysia, while CED provides litigation and bankruptcy information.

The eTR database contains non-bank negative payment histories of consumers and businesses. Each trade reference contains a delinquent payment record including the debtor’s and creditor’s names and contact information, the age of the account, outstanding payment information, past credit terms and limits and a history of demand for payments.

The eTR Plus database additionally contains the payment history information on both on-time and missed payments on non-bank consumer loan facilities, rental, telephone and utility bills.

CED provides details such as the type and severity of litigations, amounts in dispute and the identities of the plaintiffs and solicitors. The information is shared by subscribers such as banks, non-bank lenders, telcos and law firms.

Digital solutions on offer


CTOS Digital offers a host of digital solutions which support businesses through the customer lifecycle, from new customer identification to customer onboarding to decisioning to customer management and monitoring, to recovery. Products on offer include:

CTOS Scores

CTOS Consumer Score and CTOS SME Score. Three-digit numbers that represent an analytical assessment of the credit health of a consumer or business. The CTOS Consumer Score was developed by FICO, one of the leading global consumer score providers. It is generated based on five categories of predictive characteristics: payment history, outstanding credit, credit mix, pursuit of new credit and credit history length. The CTOS SME Score provides a credit evaluation of businesses.

Revenue model: Customers can purchase scores individually or as part of MyCTOS Score Reports.

Figure 5: Sample of a CTOS SME Score



Strictly Confidential
 Report No. : CM-1111-20181122030405
 Attention : cto (Credit Manager)
 Account : CTOS/SP (CTOS DATA SYSTEMS SDN BHD)
 Date : 2018-11-22 03:04:05
 Tel : -


CTOS REPORT

A: SNAPSHOT

ID Verification	
Company Name (Your input)	TEST-CASE SDN BHD
Registration No (Your input)	9999988X
Company Name	TEST-CASE SDN BHD
Registration No	9999988X
Registration Date	01-04-2000
Registered Address	Unit 01-12, Level 9, Tower A, Vertical Business Suite, Bangsar South, 59200 Kuala Lumpur
Business Address	Unit 01-12, Level 9, Tower A, Vertical Business Suite, Bangsar South, 59200 Kuala Lumpur
Business Sector	PROVIDING INFORMATION
Company Status	EXISTING
Ref No	TCSB1

Financials and Shareholders	
Last Updated	02-01-2018
Previous Name Change	TESTING INTEGRATED SDN BHD
Revenue (RM)	871,759.00
Profit After Tax (RM)	25,277.00
Total Assets (RM)	295,334.00
Paid-Up Capital (RM)	10,500,000.00
Total Company Charges (RM)	12,600,000.00
Directorship	EMILY ANG MEI LI CHONG YEN YEN JIMMY WONG WEI WEI
Top 5 Shareholders	EMILY ANG MEI LI CHONG YEN YEN TOTAL FAIL DISTRIBUTIONS SDN BHD TESTING SDN BHD TEST-SCAN SDN BHD

Credit info at a Glance			
Credit Info	Source	Entity	Related Parties
Winding UP / Bankruptcy Proceedings Records	Newspaper/Gazette	YES	NO
Legal records in past 24 months (Personal capacity)	Newspaper/CTOS	2	0
	Subscriber/Gazette	70,000.00	0
Legal records in past 24 months (non-personal capacity)	NO	0	0
		0	0
Availability of Legal Records	BNM	YES	NO
Special Attention Accounts	BNM	NO	NO
Availability of Dishonoured Cheques	BNM	YES	NO
Outstanding credit Facilities	BNM	4	0
		75,600.00	0
- Installments in arrears in past 12 months	YES	YES	NO
Credit applications in past 12 months	BNM	2	0
		1	0
		1	0



Factors that influence the Score

- Accounts last reported in delinquent status.
- Serious delinquency.
- Time since derogatory public record or collection is too short.
- Proportion of balances to credit limits on revolving accounts is too high.

CTOS Litigation Index

4561

WORST 9999 BEST 0000

Index Description

- CS struck off / Action withdrawn / Settled
- Most recent settlement was 24 months ago
- Number of records

Section Summary

Section	CTOS				Others	
	ID	SSM	BPH	LGL		TR
Selected	✓	✓	✓	✓	✓	✗
Available	A	B	C	D	-	-

Notes on various sections

- ID refers to data from CTOS' identify database
- SSM refers to data from Suruhanjaya Syarikat Malaysia
- BPH refers to data from Bank Negara Malaysia
- LGL refers to data from CTOS' litigation database
- TR refers to trade reference data submitted by merchants
- IL refers to your own internal list (if provided to CTOS)

Source: ctoscredit.com.my

CTOS Credit Manager

This is CTOS Digital's Software-as-a-service ("SaaS") online credit risk management platform. With this system, customers can search, store, monitor and manage all customer information via one dynamic platform. Customers are charged a monthly/annual subscription fee and can also purchase access to, or use of, the digital solutions through CTOS Manager. Used predominantly by commercial customers, offerings include CTOS Data Systems Reports and External Reports and portfolio alerts which monitor changes to customers' credit profile and litigation, bankruptcy, trade reference and business information.

Revenue model: Subscription fees, which can be paid monthly or annually; or on a transactional basis for digital solutions purchased through CTOS Credit Manager.

CTOS Basis

100%-owned BASIS offers CTOS Basis, which provides international and local credit reports, litigation checks, credit monitoring services and business listings. among others. According to its website ctosbasis.com.my, there are, at present, 80 countries online in CTOS Basis with worldwide coverage for update reports on 249 countries.

Revenue model: Subscription on an annual basis or prepaid packages.

Comprehensive portfolio reviews

CTOS Data Systems provides comprehensive reviews known as “scrubs” of customers’ portfolios of end-customer data. This involves comparing a customer’s portfolio against data in its own database for instances of information mismatches, which could be used to investigate end-customer fraud or information withholding.

Revenue model: A one-time fee is charged for each review, which varies based on the nature of the review.

Portfolio analytics and insights

This involves providing customised analytics and insights to customers, for instance to identify trends, trend drivers, appropriate benchmarks and targets, growth opportunities and areas of heightened credit risks.

Revenue model: A one-time fee is charged for each project, which varies based on the nature of the project.

CAD Solution

CAD is the group’s SaaS solution that automates a customer’s credit assessment process, using analytics and insights from the group’s proprietary information databases. When a customer inputs a credit application into the CAD solution, the CAD decision engine analyses the applicant against internal and external factors and produces instant application decisions.

Revenue model: CAD is available as a cloud-based service or on-premises application. Customers pay a transactional fee and a one-time set-up fee.

CTOS eKYC

This is CTOS Digital’s digital onboarding solution that provides banks and businesses with digital identity verification via a four-layer authentication process. The modules are document verification, facial recognition, bureau-file verification (customer information e.g. from a government-issued ID) and knowledge-based authentication (i.e. via a series of dynamic questions from its information database).

Revenue model: Either monthly subscription fees and/or transactional fees and a one-time set-up / implementation service.

CTOS IDGuard

This is CTOS Digital’s proprietary fraud bureau, which offers a data sharing platform to detect and prevent application fraud. It can help detect ID theft and impersonation, false and synthetic identities, data and document manipulation, organised fraud rings and syndicates.

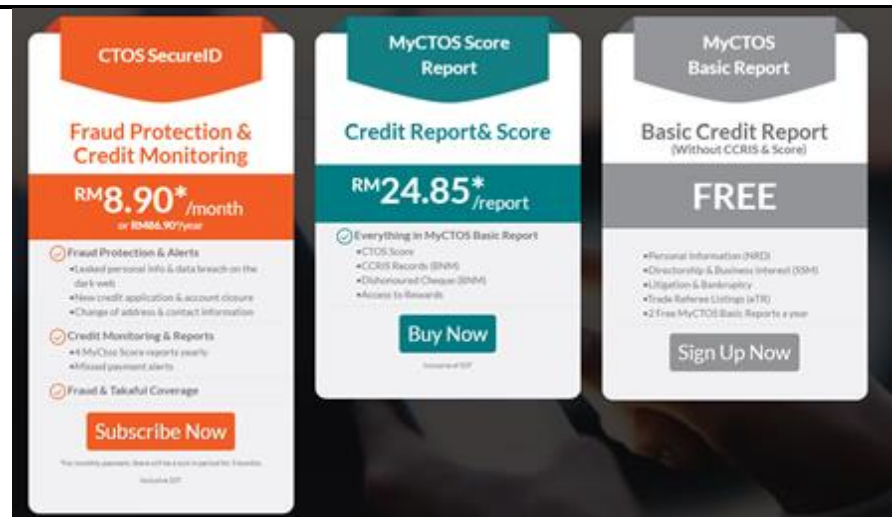
Revenue model: Annual subscription fees.

CTOS SecureID

This is a consumer fraud protection and credit monitoring SaaS solution, which provides subscribers with real-time alerts on suspicious activity and potential information data breaches on their accounts. Coverage includes dark web monitoring and notifications of new credit applications, credit limit changes, account closures, address changes and potential credit scams.

Revenue model: Monthly or annual subscription fees.

Figure 6: Subscription cost at time of writing



Source: ctosid.ctos.com.my

CTOS CreditFinder

On this online matching and referral platform, lenders can list their financial products such as home loans, personal loans etc. Consumers compare products and receive credit offers based on their CTOS Consumer Score.

Revenue model: Monthly subscription fees and marketing fees.

BOL's products

BOL's main offerings include Corpus, a comprehensive Thailand and international business information online platform that assists customers in evaluating the credit worthiness of their customers and ENLITE, a loan origination system widely used by Thai banks. Its offerings include customer lifecycle and risk management, business intelligence, debt collection services and data management solutions.

Emphasis on technology

CTOS Digital has an IT team that comprises its IT operations unit and IT security unit. While not ISO-certified as yet, the group has voluntarily adopted the international standard requirements of ISO 270001:2013. There are two data centres in Malaysia that are fully virtualised and connected through a dedicated line for data transfer between the two sites.

Security is key and CTOS Digital's security infrastructure and programmes are based on Bank Negara Malaysia's ("BNM") risk management guidelines. There is proactive internal and external monitoring of the security landscape, and external IT audits are performed annually to comply with BNM's Risk Management in Technology ("RMiT") requirements.

The group's IT system is audited by the Ministry of Finance and BNM and its technology matches the IT requirements of banks. With its heavy investment in tech security, there has not been a breach of security over the last 30 years.

Some of the group's technological features are as follows:

- A two-tier infrastructure separating computing power and storage capacity. This provides the scale and capacity that its operations require.
- Systems run on flash array, or multiple flash memory drives. This allows the group to handle high volumes of disparate data and maintain high delivery speeds.
- Technology infrastructure is horizontally and vertically scalable and connects multiple levels of networks, servers, storages and applications through virtualization. This increases technology productivity and efficiency while optimising costs.
- Planned, coordinated and well managed development and maintenance of solutions based on the requirements of international standard ISO 27001:2013.
- Two data centres in Malaysia to reduce the impact of disruptions, create redundancy and increase resiliency.

Customers and suppliers

Over the past three years (2018-2020), CTOS Digital's top five customers have accounted for between 14%-17% of total revenue. While not named, the prospectus highlights that the top four customers in 2020 were banks, while the fifth was a company in the sales and leasing of household appliances in Malaysia. CTOS Digital's relationship with the four banks span over 18 years, and over 12 years with the fifth company.

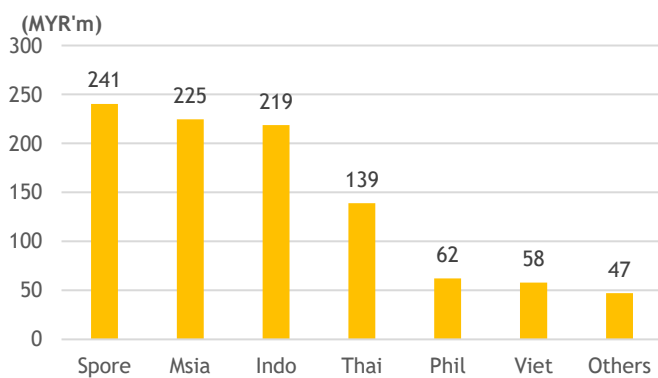
Of its suppliers, the largest has historically been BNM, which accounted for about 20% of total purchases in 2018 and 2019. Since 2020, BNM has granted a fee waiver for access to its Central Credit Reference Information System ("CCRIS"), so as to lower the cost of doing business, particularly for SMEs. As a result, BNM accounted for a lower 9.6% of total purchases in FY20. Correspondingly, CTOS Digital has had to pass this on to its customers, through a reduction in fees charged for its CTOS Data Systems Reports. BNM provides CTOS Digital access to its CCRIS and DCHEQS systems via a Participation Agreement that was signed on 30 June 2015.

The credit reporting industry in ASEAN

According to IDC Market Research (Malaysia) Sdn Bhd (“IDC”), the revenue of the credit reporting industry in ASEAN totalled MYR990.5m in 2020. It grew at a 5-year CAGR of 12.8% between 2016-2020 and is projected to expand at a CAGR of 10.8% from 2021E-2025E. This revenue growth is expected to be driven by greater penetration and usage, and through the expansion of product offerings e.g. analytics, eKYC, application automation and direct-to-consumer services.

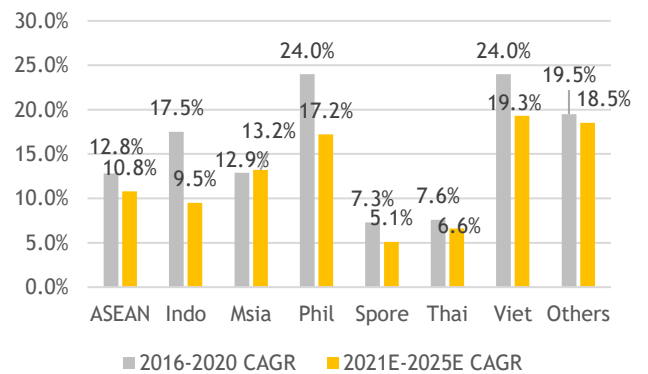
In Malaysia, the size of this industry in terms of revenue was MYR225m in 2020 (i.e. 23% the size of the ASEAN market) and it expanded at a CAGR of 12.9% between 2016-2020. IDC projects a 5-year CAGR of 13.2% between 2021-2025 for the Malaysian credit reporting industry, i.e. faster than most of its regional peers.

Figure 7: ASEAN CRA industry market size by revenue (2020)



Note: Based on USD to MYR exchange rate of 4.1 as of 31 Mar 2021
Source: IDC

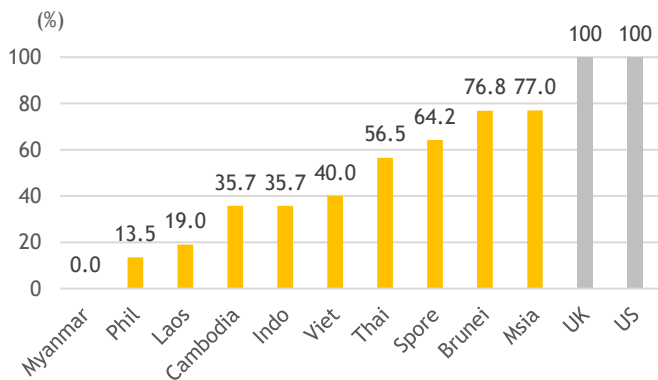
Figure 8: ASEAN credit reporting industry revenue CAGR



Source: IDC

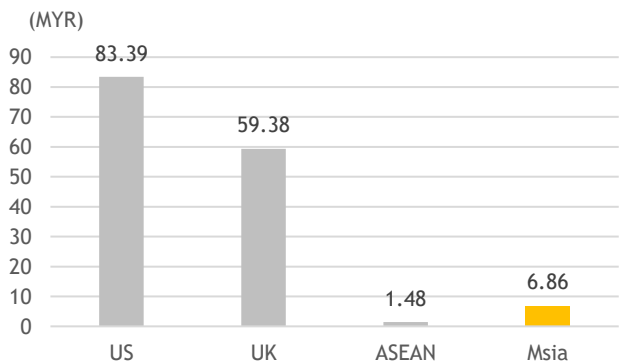
Market penetration in Malaysia is high relative to that of its ASEAN peers - the percentage of population covered by a credit bureau is estimated to be 77% as at Mar 2021, the highest among its ASEAN peers. Nevertheless, what stands out in IDC’s analysis is that Malaysia’s credit reporting revenue per capita in 2020 was just MYR6.86, which is significantly lower than that of developed countries such as the UK (MYR59.38) and the US (MYR83.39). There is, as such, much room for growth in credit reporting revenue.

Figure 9: % of population covered by a credit bureau (2019)



Source: IDC, World Bank

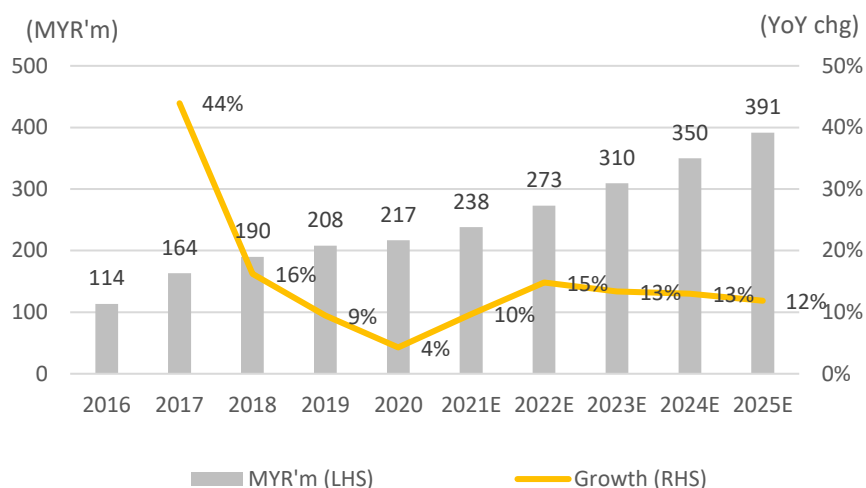
Figure 10: Credit reporting revenue per capita (2020)



Source: IDC, World Bank

According to IDC, the future 5-year CAGR (2021E-2025E) of 13.2% for the domestic credit reporting market is expected to be driven by factors such as 1) rising financial literacy; 2) greater penetration into the SME sector (SMEs contributed to 38.9% of Malaysia's GDP in 2019 and as at Jan 2021, 16.6% of total loans disbursed were to SMEs.); 3) rising demand for credit; and 4) the advent of digital banking, more so since BNM is looking to issue five virtual banking licenses next year.

Figure 11: Malaysia's credit reporting revenue market size and growth



Source: Company annual reports, IDC

IDC believes that Malaysia's total addressable market ("TAM"; defined as revenue opportunity available) will grow at a CAGR of 28.2% between 2021 and 2025. High growth sectors with a CAGR of 40% from 2021E-2025E would be automotive, media technology, insurance, real estate, retail and healthcare.

Figure 12: Total addressable market by industry

(MYR'm)	2016	2020	2025E	CAGR 16-20	CAGR 21E-25E
Fin services	124.1	203.4	682.3	13.1%	21.8%
D2C	14.4	23.5	122.6	12.9%	32.4%
Retail	3.3	5.2	50.1	12.0%	42.6%
Healthcare	1.8	2.7	60.0	10.9%	49.2%
Insurance	4.8	8.0	52.9	13.7%	43.7%
Telco	4.9	8.1	44.6	13.3%	35.8%
Auto	1.8	3.0	49.1	13.9%	67.3%
Media tech	1.7	2.8	43.7	13.5%	62.5%
Real estate	1.9	5.4	26.9	29.6%	43.2%
Software	1.8	2.9	9.3	12.9%	21.2%
Total	160.5	265.0	1,141.5	13.3%	28.2%

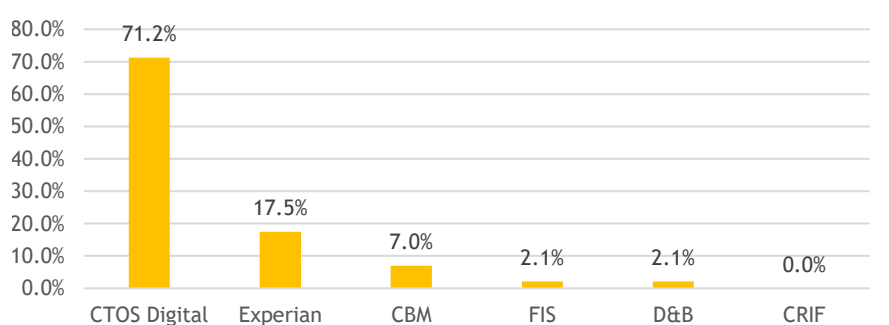
Source: Company annual reports, IDC

The domestic competition

According to IDC, there are, presently, seven Credit Reporting Agencies that are registered with the Registrar Office of Credit Reporting Agencies and they are: CTOS Data Systems, BASIS, Experian, Credit Bureau Malaysia Sdn Bhd (“CBM”), CRIF OMESTI Sdn Bhd, Dun & Bradstreet (M) Sdn Bhd (D&B) and FIS Data Reference Sdn Bhd (FIS).

CTOS Digital dominates the market by far, with a 71.2% market share by revenue in 2020, with Experian (which is 26% owned by CTOS Digital) trailing at 17.5%. IDC attributes CTOS Digital’s larger revenue base to its diverse offering of value-added services, adjacent solution verticals e.g. fraud analytics and digital onboarding solutions, as well as the acquisition of BASIS, which provides access to international credit reports. In Thailand, 22.65%-owned BOL has over 20 years of experience and it has the largest revenue market share in Thailand at 59%.

Figure 13: Market share by revenue (2020)



Source: Company annual reports, IDC

In terms of solutions and services on offer, CTOS Digital is by far more comprehensive, followed by Experian, which is CTOS Digital’s associate company.

Figure 14: Solutions and services comparison

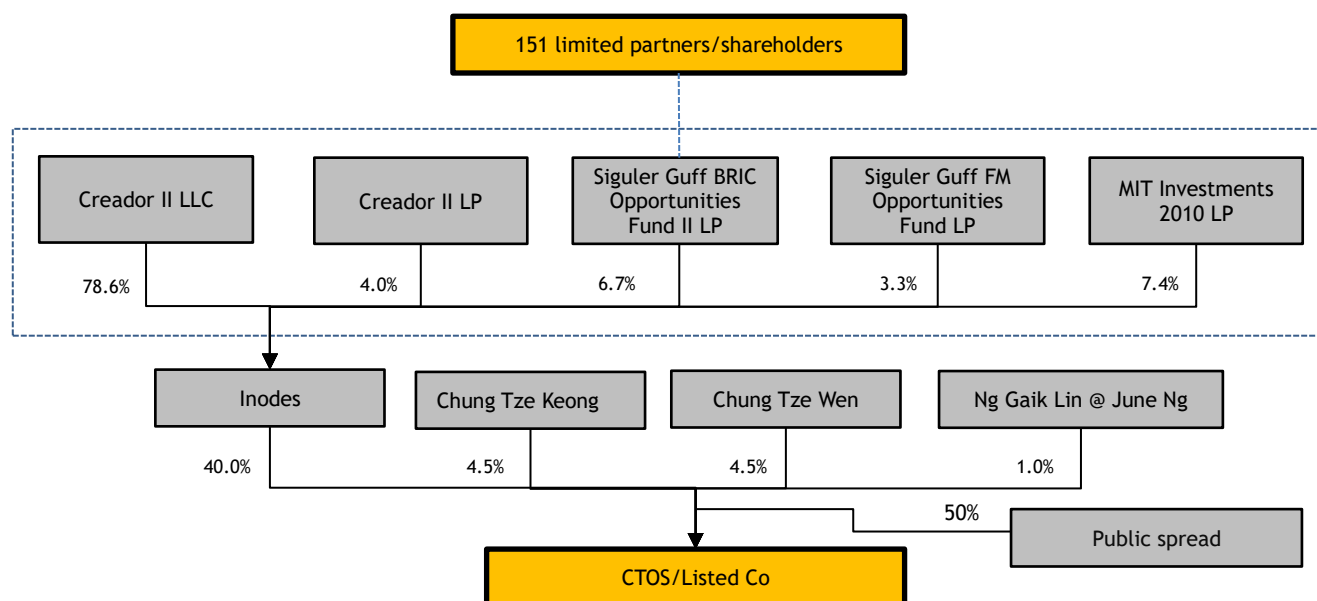
	CTOS	CBM	Experian	CRIF	D&B	FIS
Access to CCRIS	✓	✓	✓			
Credit scoring	✓	✓	✓			
Credit rating	✓	✓	✓	✓	✓	
Consumer credit report	✓	✓	✓			✓
Commercial credit report	✓	✓	✓	✓	✓	✓
- Biz info report	✓	✓	✓	✓	✓	✓
- Credit monitoring service	✓	✓	✓			
- International reports	✓		✓	✓	✓	
Business analytics	✓	✓	✓	✓	✓	
Fraud prevention	✓		✓			
Fraud monitoring	✓		✓			
Scoring/rating validation services	✓	✓	✓			
Credit decisioning & analytics	✓		✓	✓		
Digital onboarding/eKYC	✓		✓	✓		
Credit risk management	✓		✓		✓	
Credit comparison site	✓		✓			
Identity theft protection	✓		✓			
Tenant screening	✓					

Source: Company websites, IDC

The shareholders

CTOS Digital's largest shareholder is Inodes with an 40% shareholding post-IPO (from 80% previously), and it is effectively Creador's special purpose vehicle in which to hold this investment. Creador is a Malaysian mid-market private equity fund. Inodes acquired a 70% stake in Aug 2014 and increased it gradually to 80% pre-IPO. CTOS Digital's founders, Chung Tze Keong (aged 65) and Chung Tze Wen (aged 62), started the company in Nov 1990 and they currently hold a 4.5% each in the company post-IPO (from 9% each previously). Prior to founding CTOS Digital, Tze Keong was a General Manager at Isijaya Sdn Bhd, and was involved in sales and marketing as well as finance matters. Tze Wen, meanwhile, was then Head of the IT department and a director at Isijaya.

Figure 15: CTOS Digital: Shareholding Structure



Source: Company

The Board of Directors

CTOS Digital's Board of Directors (BOD) comprises 8 members, details of which are laid out in Appendix 1. Of the 8, 2 are female. All are independent directors with the exception of Dennis Colin Martin, who is the Group's CEO, and Loh Kok Leong, who is non-independent, but also non-executive.

Dennis Martin (aged 57) joined CTOS Digital as its Group CEO in March 2017. He started his career in Bank of New Zealand and he has over 20 years of experience in the credit reporting industry and 16 years of experience in the banking sector. He joined Experian Asia Pacific in Hong Kong in 2005 as Director of Credit Services and was promoted to Managing Director, Credit Services Asia Pacific in Jan 2007. Before he left Experian, he was the Vice President of Strategy and Sales of Experian Asia Pacific, based in New Zealand. He joined CoreLogic (New Zealand) Ltd as General Manager Corporate Solutions from May 2013 to Feb 2014 and then joined Dun & Bradstreet (New Zealand) Ltd as Managing Director from Feb 2014 to Dec 2015. He later served as the owner and principal consultant of MicDan Consulting, a sole proprietorship, before joining the group.

Loh Kok Leong, meanwhile, is a Non-independent Non-Executive Director. He is a Senior Managing Director at Creador and he is also a director on the board of various investor companies of Creador.

Competitive strengths

CTOS Digital's competitive strengths include the following:

The leading player in a highly regulated market

CTOS Digital is the leading player in the local CRA market. With a 71.2% market share in terms of revenue, it has no close competitor. Moreover, it owns a 26% stake in the second largest player, Experian, which has a 17.5% market share. Due to the high regulatory barriers to entry, there has only been one new entrant into the industry in Malaysia over the last ten years. CTOS Digital's subscriber base has expanded at a CAGR of 17% from 2018 to 2020 and it currently has 1.4 million registered users for CTOS ID and over 17,000 Commercial customers. Other barriers to entry include its strong branding domestically and its substantial investments in creating a cyber-resilient security culture.

A long history and extensive credit database

With a history spanning over 30 years, the company has built up an extensive database that contains about 15 million consumer profiles and approximately 8 million company and business profiles. According to IDC, CTOS Digital has one of the largest trade reference databases in Malaysia. Moreover, the company has been developing other non-traditional information sources and also maintains a database of positive information about a customer's payment history.

Established relationships/diversified customer base

The group's customer base is diversified across various sectors and its top five customers account for just 14% of revenue, despite long-term relationships ranging from 8 to 19 years. 75% of its Key Accounts customers' revenue are recurring and the group has retained 100% of CTOS Data System's Key Accounts customers since 2017.

A comprehensive suite of digital solutions

According to IDC, none of its competitors can offer the full suite of digital solutions that CTOS Digital offers. It has a comprehensive ecosystem of credit management solutions and a fully digital platform for end-to-end credit management across the various stages of the customer lifecycle. The customer lifecycle begins with identifying a prospective business/consumer to customer/vendor onboarding, application & decisioning, management & monitoring and finally recovery - CTOS Digital's digital solutions are deployed at all the aforementioned stages.

An extensive distribution network and sales force

The group's Key Account and Commercial sales team comprises over 170 employees including account managers and business development officers. It has a digital marketing team to handle Direct-to-Consumer customers. There are eight service centres across Malaysia with 24/7 IT support.

A strong financial profile

CTOS Digital recorded a revenue CAGR of 15.1% between 2018 and 2020. More than 75% of its revenue is recurring. According to IDC, its EBITDA margin of 36.9% in FY20 compares very favourably against that of Experian (24%) and Credit Bureau Malaysia (13.9%).

Strong shareholder & management team

Since acquiring a majority stake in Aug 2014, major shareholder Creador has expanded the CTOS Digital's commercial base, increased its share of wallet in Key Accounts, penetrated new verticals and new capabilities, and moved into new markets e.g. Thailand. These have in part been made possible through various acquisitions e.g. 26% of Experian in 2019, a 20% stake in BOL in 2020 and a 100% equity interest in BASIS in 2021.

CTOS Digital's CEO, Dennis Martin, has over 20 years of experience in the credit reporting industry and 16 years of experience in the banking industry. He was previously the Managing Director of Credit Services Experian APAC and the Managing Director for Experian APAC in South East Asia.

CTOS Data System's CEO, Eric Chin, has over 25 years of experience in business, sales and operations. He was previously the Chief Operating Officer at Credit Bureau Malaysia.

CTOS Data System's Chief Operating Officer, Tracy Gan, has over 23 years of experience in operations. She joined CTOS in May 2017 as the General Manager in Customer Experience before being promoted to the COO later on. Prior to joining CTOS, she was the Head of Distributor and Modern Trade Management at Maxis.

Future plans

CTOS Digital's future plans include the following strategies:

Extending its ecosystem of credit management solutions

Over the next two years, CTOS Digital intends to invest in two key areas i.e. its IT capabilities and data and analytics. About 50% of its capex will be allocated towards upgrading its IT capabilities, about 25% into enhancement of digital solutions and about 15% into data and analytics. This is premised on the group's belief that demand for credit analytical services will increase as its customers become more digitalized over time. As such, it intends to develop new value-added digital solutions that are customised to customers' needs. Management will also look to increase its investments in artificial intelligence and machine learning in the medium to long term.

Deepening and broadening its data sources

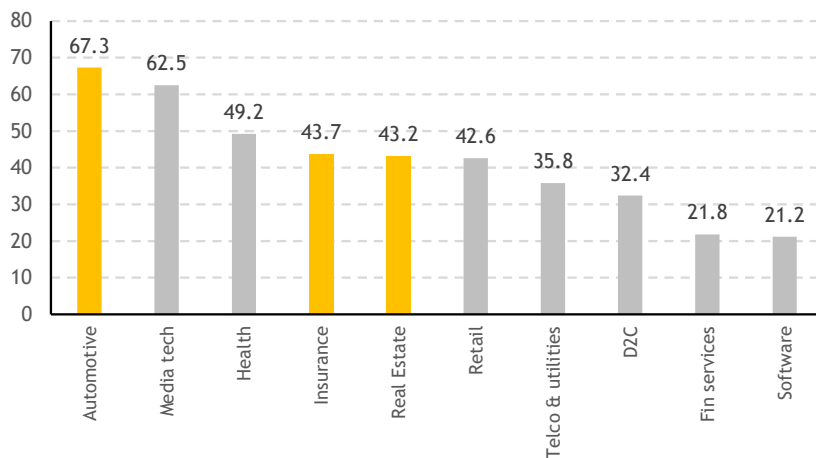
Despite having invested in various new databases, CTOS Digital will continue to deepen and broaden its data sources, leveraging on its long-standing working relationship with its key customers. This will not only benefit its customers through more insightful digital solutions but also establish an even higher barrier to entry for the group.

Expanding into new verticals

CTOS Digital intends to expand into new sectors, specifically automotive, real estate and insurance. According to IDC, the total addressable market of these three sectors combined is forecast to expand at a CAGR of 50.6% from MYR25.1m in 2021 to MYR128.9m in 2025.

BNM is on the verge of awarding five digital bank licenses in Malaysia, which is expected to drive stronger digital adoption relating to credit analytics. This will, in turn, spur demand for CTOS' existing database solutions and services, as well as potential new capabilities that it may develop based on specific or customised DB requirements, such as integration of AI/ML algorithms into the DB's credit evaluation ecosystem. The adoption of AI/ML capabilities allows the credit risk model to constantly improvise over time as new information is fed into the system.

In real estate, the group has launched its CTOS Tenant Screening Report, which allows landlords/agents to screen prospective tenants through ID verification, KYC screening, financial checks, income estimation and historical legal cases or bankruptcies. There are various digital solutions in the pipeline related to motor vehicle checks and collections, while for insurance, the group sees the potential to apply its analytics to predict the associated risks of an insurance policy and the probability of insurance fraud and likelihood of fatality and accidents.

Figure 16: Total addressable market (2021-2025E CAGR, %)

Note: Software = Software and professional services

Source: IDC

Maintaining its market share leadership

To maintain its market leadership, the focus will be on growing its Key Accounts customer base through the introduction of new digital solutions. Over the past three years, it has launched at least one digital solution a year e.g. CTOS eKYC in 2019, CTOS IDGuard in 2020 and CTOS Tenant Screening Report in 2021. The group will also launch consumer awareness campaigns to increase its market penetration within the consumer segment.

Selectively pursuing acquisitions and investments

In 2020, CTOS Digital acquired a minority stake in BOL for a foothold into Thailand and in Jan 2021, it acquired the entire equity stake in BASIS which offers complementary digital solutions, cost synergies and increased market share. The latter also provides CTOS Digital with an expanded range of international business reports. Management continues to actively seek opportunities to expand within the Asia Pacific region - it has identified a target business in Asia Pacific but acquisition plans are still in a preliminary discussion phase.

Following its successful listing in the Main Board of Bursa Malaysia in Jul 2021, CTOS Digital has proposed to acquire 4.65% stake in RAM Holdings Berhad on 29 Jul 2021. RAM is a leading provider of independent credit ratings, research, training, risk analysis, environmental, social and governance (ESG) analytics and bond pricing and valuation data. Furthermore, on 6 Aug 2021, CTOS Digital has acquired another 2.65% stake in BOL, which has raised its holdings in BOL to 22.65%.

1HFY21 results review

Figure 17: Profit & Loss summary

FYE: Dec (MYR'm)	2QFY21	2QFY20	% YoY	1HFY21	1HFY20	% YoY
Revenue	33.5	30.7	9.4%	75.8	64.7	17.1%
COGS	(3.9)	(4.3)	(9.5%)	(9.3)	(9.7)	(4.4%)
Gross profit	29.7	26.4	12.4%	66.5	55.0	20.9%
Other income	(0.1)	0.1	NM	(0.1)	0.1	NM
Selling and marketing expenses	(6.1)	(7.0)	(13.1%)	(15.0)	(16.1)	(7.0%)
Administrative expenses	(8.5)	(10.8)	(21.2%)	(24.6)	(21.1)	(16.8%)
EBITDA	17.2	10.4	65.7%	31.4	21.3	(47.6%)
Depreciation & amortisation	(2.2)	(1.7)	31.3%	(4.6)	(3.3)	(38.4%)
Operating profit	14.9	8.7	72.4%	42.8	41.7	49.3%
Finance cost	(1.6)	(0.9)	81.5%	(5.2)	(1.6)	>100%
Associates & JV	1.8	0.3	>100%	3.4	0.5	>100%
Pretax profit	15.1	8.1	85.9%	25.0	16.9	48.4%
Tax	(2.3)	(0.6)	>100%	(4.9)	(1.3)	>100%
Minority interest	(0.9)	-	NM	(0.6)	-	NM
Net profit	11.9	7.5	58.2%	19.6	15.6	25.2%
Exceptional items/one-offs	(3.2)	(2.8)	12.1%	(11.8)	(2.8)	>100%
Core net profit	15.0	10.3	45.6%	31.4	18.5	70.1%
Gross profit margin	88.5%	86.1%		87.8%	85.0%	
EBITDA margin	51.2%	33.8%		41.4%	32.9%	
EBIT margin	44.6%	28.3%		35.4%	27.7%	
Pretax profit margin	45.1%	26.5%		33.0%	26.1%	
Core net profit margin	44.9%	33.7%		41.4%	28.8%	
Tax rate	15.3%	7.7%		19.7%	7.4%	

Source: CTOS Digital, Maybank KE

Figure 18: Revenue breakdown by customer segment

FYE: Dec (MYR'm)	1HFY21	1HFY20	% YoY
Key accounts	25.3	23.5	7.5
Commercial - Malaysia	42.0	38.5	9.2
Commercial - international	3.3	-	NM
Direct-to-Consumer	5.2	2.7	90.1
Total revenue	75.8	64.7	17.1

Source: CTOS Digital, Maybank KE

1HFY21 revenue increased by 17% YoY, mainly attributed to outperformance across all key segments: Key Accounts, Commercial and Direct-to-Consumer (D2C). Notwithstanding the implementation of Malaysia's Movement Control Order (MCO) throughout 1HFY21, key segments' revenue was primarily driven by strong growth of new CTOS Credit Manager subscribers and strong demand for CTOS Data Systems Reports and digital solutions. 1HFY21 revenue of MYR75.8m was net of MYR6.2m CCRIS fee waiver (vs. MYR1.3m in Jun 2020/1HFY20).

Consequently, the group's pretax profit grew by 48% YoY, as a result of: (i) revenue growth from all 3 segments, and (ii) lower operating expenses (i.e. advertising and promotions).

All in all, CTOS Digital's 1HFY21 core net profit came at MYR31.4m (+70.1%, YoY), ahead of ours (57%) and consensus (58%) full year FY21E forecasts. This was after adjusting for exceptional/non-recurring items, namely: (i) losses from CIBI and CIBI Holdings, (ii) costs related to acquisitions of CIBI and Basis, (iii) share-based payment expense; (iv) interest expense on bank borrowings, (v) unrealised forex losses on USD-denominated borrowings, and (vi) incremental income tax expense of CTOS Data Systems, which was recognised based on the estimated annual effective tax rate for FY21 (pursuant to MDEC's Grandfathering and Transitional Guidelines and Transitional Period of MSC Pioneer Certificate). Effective tax rate is a higher-than-historical 20%, this temporary normalisation being the convention for financial reporting pending renewal of MSC status within 2H21.

Financials

Figure 19: Profit & Loss

FYE: Dec (MYR'm)	FY18	FY19	FY20	FY21E	FY22E	FY23E
Revenue	110.5	129.1	140.5	160.7	186.5	212.9
COGS	(17.5)	(21.6)	(19.1)	(22.5)	(24.2)	(27.7)
Gross profit	92.9	107.5	121.4	138.2	162.2	185.2
Other income	0.2	0.1	0.2	0.2	0.2	0.2
Selling and marketing expenses	(25.5)	(27.8)	(33.9)	(37.0)	(41.0)	(46.8)
Administrative expenses	(35.7)	(38.1)	(44.9)	(47.2)	(49.5)	(52.0)
EBITDA	35.3	48.0	50.5	62.0	81.8	95.4
Depreciation & amortisation	3.4	6.3	7.7	7.8	9.9	8.8
Operating profit	31.9	41.7	42.8	54.3	71.8	86.6
Finance costs	(0.1)	(1.2)	(4.2)	-	-	-
Share of result of an associate	0.0	0.8	1.8	1.8	1.9	2.0
Profit before tax	31.8	41.2	40.3	56.1	73.7	88.5
Taxation	(2.1)	(2.2)	(2.4)	(3.3)	(4.3)	(5.1)
Minority interest	0.0	0.0	1.2	1.7	2.2	2.7
Net profit	29.7	39.0	39.2	54.5	71.7	86.0
Exceptional items	0.0	0.5	2.3	0.0	0.0	0.0
Net profit (ex-EI)	29.7	39.5	41.5	54.5	71.7	86.0

Source: Company, Maybank KE

Figure 20: Customer segment breakdown

FYE: Dec (MYR'm)	FY18	FY19	FY20	FY21E	FY22E	FY23E
Revenue						
Key Accounts	41.4	49.3	47.3	57.2	69.0	79.7
Commercial	64.4	74.4	79.6	96.3	109.2	123.9
Direct-to-Consumer	4.6	5.4	6.3	7.3	8.2	9.3
International B2B	-	-	7.3	-	-	-
Total	110.5	129.1	140.5	160.7	186.5	212.9
YoY growth						
Key Accounts		19.0%	(4.0%)	20.8%	20.8%	15.5%
Commercial		15.6%	6.9%	21.0%	13.4%	13.4%
Direct-to-Consumer		15.9%	17.1%	15.5%	13.4%	13.4%

Source: Company, Maybank KE

3-year forward core earnings CAGR of 28%

We derive a 3-year (FY20-FY23E) core net profit CAGR of 30%, attributed to a favourable growth outlook across all customer segments. Key assumptions include the following:

- Number of accounts to trend higher.** CTOS Digital have approximately: (i) 430 accounts in the Key Accounts segment, (ii) 17,000 customers in the Commercial segment, and (iii) 1.4 million users registered for a CTOS ID account under the Direct-to-Consumer segment. In FY21-23E, we are projecting account/customer volume growths of: (i) Key accounts: +5% p.a., (ii) Commercial: +8-10% p.a., and (iii) Direct-to-Consumer: +8-10% p.a. (Figure 22). We deem our growth estimates as relatively conservative as compared to the historical growth performance of CTOS Digital's Commercial and Direct-to-Consumer segments which have recorded double-digit rate growths in customer/subscribers in recent years (i.e. Commercial: +14% CAGR from 2018-2020).

- **Average revenue to increase YoY.** In FY21-23E, we are assuming average revenue per account/customer growths of: (i) Key accounts: +10-15% p.a., (ii) Commercial: +5-10% p.a., and (iii) Direct-to-Customer: +5-10% p.a. (Figure 22). Apart from CTOS Digital's existing offerings, we expect average revenue per account/customer growths across the segments will also be driven by new products and services, and new verticals. We believe this would also result in a more favourable or improving sales mix.

Figure 21: Margin and growth summary

FYE: Dec (MYR'm)	FY18	FY19	FY20	FY21E	FY22E	FY23E
Margin						
Gross profit	84.1%	83.3%	86.4%	86.0%	87.0%	87.0%
EBITDA	31.9%	37.2%	35.8%	38.6%	43.8%	44.8%
EBIT	28.9%	32.3%	30.4%	33.8%	38.5%	40.7%
Pretax profit	28.8%	31.9%	28.7%	34.9%	39.5%	41.6%
Net profit	26.8%	30.2%	27.9%	33.9%	38.4%	40.4%
Core net profit	26.8%	30.6%	29.5%	33.9%	38.4%	40.4%
Effective tax rate	6.7%	5.4%	5.8%	5.8%	5.8%	5.8%
YoY growth						
Revenue	-	16.9%	8.8%	14.4%	16.0%	14.2%
Gross profit	-	15.7%	12.9%	13.8%	17.4%	14.2%
EBITDA	-	36.1%	4.7%	23.4%	31.8%	16.6%
EBIT	-	30.7%	2.6%	26.8%	32.4%	20.5%
Pretax profit	-	29.7%	(2.2%)	39.1%	31.4%	20.0%
Net profit	-	31.5%	0.5%	39.2%	31.4%	20.0%
Net profit (ex-EI)	-	33.1%	5.1%	31.5%	31.4%	20.0%

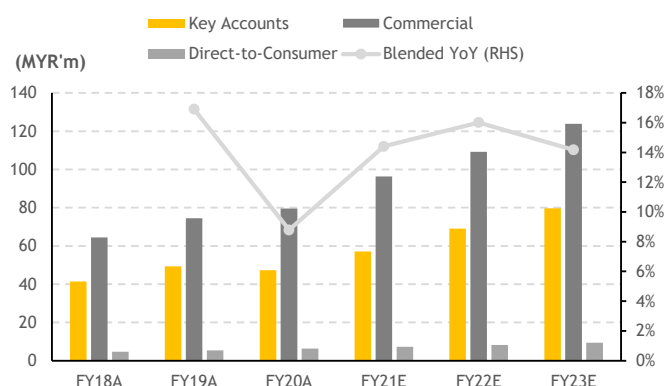
Source: Company, Maybank IB

Figure 22: Segmental forecast (ARPU-driven)

FYE: Dec (MYR'm)	FY21E	FY22E	FY23E
Revenue			
Key Accounts	57.2	69.0	79.7
Commercial	96.3	109.2	123.9
Direct-to-Consumer	7.3	8.2	9.3
Account/customer			
Key Accounts	452	474	498
Commercial	18,700	20,196	21,812
Direct-to-Consumer (m customers)	1.4	1.5	1.7
ARPU (MYR)			
Key Accounts	126,594	145,583	160,141
Commercial	5,151	5,408	5,679
Direct-to-Consumer	5	5	6

Source: Maybank KE

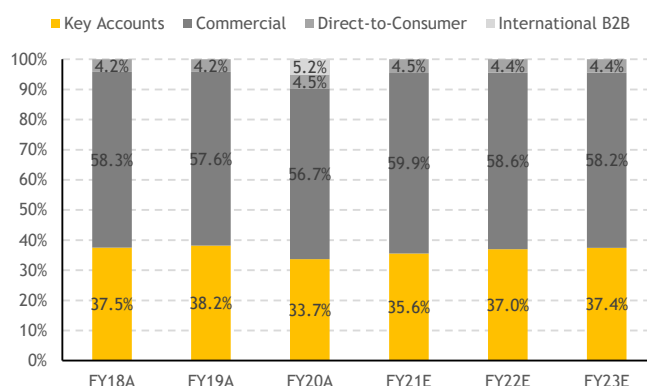
Figure 23: Revenue trend



Note: International B2B segment's contribution in FY20 has been omitted for better segmental trend representation

Source: Company, Maybank KE

Figure 24: Revenue breakdown



Source: Company, Maybank KE

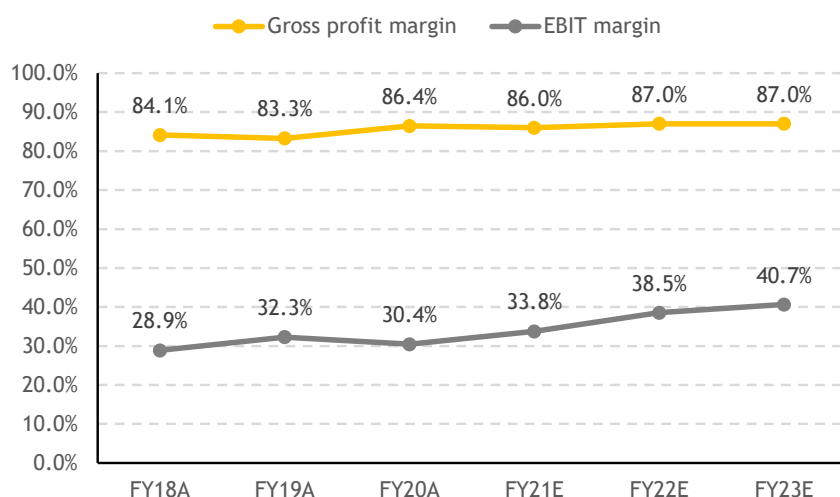
Costs and expenses

CTOS Digital's cost of sales primarily comprises: (i) data acquisition costs for its database, (ii) fees paid to vendors and service providers for licenses, royalties and services to support its digital solutions, and (iii) costs of reports purchased from third parties. In-line with FY20 cost of sales-to-revenue of 14%, we estimate 13-14% in FY21-23E. We also expect some upticks in gross profit margins due to improving sales mix and economies of scale.

Selling and marketing expenses comprise of staff cost for non-administrative employees (i.e. sales and marketing staffs; such as salaries, bonuses, allowances) and advertising, promotion and sales commission expenses (i.e. incentives, agency fees). We forecast selling and marketing expenses-to-revenue of 22-23% in FY21-23E, which is within the FY18-20 range of 22-24%.

CTOS Digital's administrative expenses mainly consists of: (i) staff cost for administrative employees, (ii) depreciation and amortisation, (iii) information technology ("IT"), (iv) legal and professional fees, (v) rental of buildings, (vi) staff insurance, (vii) traveling and entertainment, (viii) office expenses, (ix) allowance for impairment of receivables, (x) unrealised forex gain/loss, and (xi) others. We understand that the bulk of CTOS Digital's administrative expenses are deemed as fixed costs. Hence, we estimate a stable +5% YoY growth p.a. for FY21-23E administrative expenses. Due to the scaling nature of CTOS' core digital infrastructure business, growing economies of scale mean EBIT margin in our forecast grows at a faster pace than gross margin.

Figure 25: Gross profit and EBIT margins



Source: Company, Maybank IB

Tax: Pioneer status in place

CTOS Digital's main contributor and subsidiary, CTOS Data Systems is entitled to pioneer status incentives under the Promotion of Investments Act 1986 for MSC Malaysia Qualifying Activities. This, in turn, has resulted in low FY18-20 effective tax rates of 5.4-6.7% (also including some tax variations from overseas equity interests and subsidiary). We have assumed that the pioneer status is extended for another 5 years upon its expiry in Nov 21, and hence, we project CTOS Digital's FY21-23E effective tax rate at 5.8%.

Elsewhere, based on our scenario analysis, imputing a 24% effective tax rate (as opposed to 5.8%) would lower our FY21-23E net profit estimates by 24-38%.

Net cash balance sheet

We forecast healthy FY21-23E cash positions, with net cash of MYR76m-140m, and free cash flow of MYR51m-87m. This would be able to support future dividends and potential M&A activities. Prior to IPO, FY20 was in a Net Debt position of c.MYR106m. As some of the IPO proceeds are used to clear borrowings, we reflect FY20 in pro-forma.

Meanwhile, we are also expecting capital expenditure to remain low and stable going forward, attributed to CTOS Digital's business model which is primarily cash flow-centric and has low recurring capex requirements.

Imputing a dividend payout ratio of 60%

CTOS Digital is targeting a dividend payout of 60% of net profit. Hence, our FY21-23E forecast has also assumed a payout ratio of 60%. This translates into dividends of MYR33m/43m/52m or DPS of 1.5/2.0/2.3sen for FY21E/22E/23E. In FY20, dividends amounted to MYR11m (derived DPS of 0.5sen) with payout ratio of 27%. In 1H21 period an interim dividend was paid amounting to MYRxm or DPS of xsen

Figure 26: Balance sheet summary

FYE: Dec (MYR'm)	FY20	FY21E	FY22E	FY23E
Trade and other receivables	23.8	27.3	31.7	36.2
Cash, deposits and bank balances	58.0	75.5	104.3	139.5
Total current assets	81.8	102.8	136.0	175.7
Property, plant & equipment	16.3	21.1	18.6	17.2
Right-of-use assets	1.3	1.3	1.3	1.3
Intangible assets	79.1	79.1	79.1	79.1
Investment in an associate	150.8	150.8	150.8	150.8
Others	0.2	0.2	0.2	0.2
Total non-current assets	247.7	252.5	250.0	248.6
Total assets	329.5	355.3	386.0	424.3
Trade and other payables	21.9	25.8	27.8	31.8
Contract liabilities	6.9	6.9	6.9	6.9
Lease liabilities	1.4	1.4	1.4	1.4
Provision for restoration costs	0.6	0.6	0.6	0.6
Amount due to a related party	0.4	0.4	0.4	0.4
Taxation	0.7	0.7	0.7	0.7
Total current liabilities	31.9	35.9	37.9	41.8
Trade and other payables	9.4	9.4	9.4	9.4
Deferred tax liabilities	0.1	0.1	0.1	0.1
Total non-current liabilities	9.6	9.6	9.6	9.6
Total liabilities	41.5	45.4	47.4	51.4
Share capital	411.9	411.9	411.9	411.9
Reserves	(192.9)	(192.9)	(192.9)	(192.9)
Others	69.1	90.9	119.5	154.0
Shareholder's equity	288.1	309.9	338.6	373.0
Minority interest	-	-	-	-
Total equity	288.1	309.9	338.6	373.0

Note: There are selected rounding differences

Source: Company, Maybank Kim Eng

Figure 27: Cash flow summary

FYE: Dec (MYR'm)	FY20	FY21E	FY22E	FY23E
Net cash from operating activities	51.5	62.8	79.2	94.3
Net capex	(4.7)	(12.1)	(7.0)	(7.0)
Others	(129.1)	(0.4)	(0.4)	(0.4)
Net cash from investment activities	(133.8)	(12.5)	(7.4)	(7.4)
Change in debt	122.3	-	-	-
Dividends	(10.5)	(32.7)	(43.0)	(51.6)
Others	(26.7)	-	-	-
Net cash from financing activities	85.0	(32.7)	(43.0)	(51.6)
Net increase/(decrease) in cash	2.7	17.5	28.8	35.2
Free cash flow	46.8	50.7	72.2	87.3

Source: Company, Maybank Kim Eng

Valuations

Initiate with BUY, TP MYR2.17

We initiate coverage of CTOS with a BUY rating, key underpinnings for our positive view being its market dominance, strong management and attractive secular earnings growth outlook. The latter is underpinned by the combination of an underpenetrated market and multiple bottom-up revenue-broadening initiatives that are supported by tailored solutions for various end-users, solid UX interface as well as sophisticated back-end software network and state-of-the-art cybersecurity systems.

CTOS does not have a comparable listed peer domestically, thus the closest peers consist mostly of global credit bureaus which operate in the same industry. For the purpose of relative valuation, we opine that credit rating agencies (Eg: Experian, Equifax), as well as market data providers (Eg: Reuters, Factset) that deal with corporate clients as well as consumers in providing data-oriented digital solutions are reasonable peers to include in our metrics. We have also included the domestic tech software services-oriented peers i.e. GHL Systems, Revenue Group (Payment solutions), as well as MYEG (E-government solutions).

PER-to-Earnings Growth (“PEG”) Valuation

Given CTOS’ strong secular growth outlook as supported by its aforementioned organic and inorganic initiatives and targets, as well as a favourable market backdrop that is continuing to see new growth opportunities surface e.g. digital banking, we believe PEG is the most appropriate valuation methodology for this high-growth company. Per Fig 32, CTOS’ peer basked median PEG as calculated on FY21-23E CAGR and FY22E PER is estimated at 2.6x - applying this multiple to CTOS’ FY22E EPS of 3.3 sen, we arrive at a PEG-based TP of MYR2.17.

Figure 28: TP Derivation

FY22E EPS (cents)	3.3
Earnings 2Y CAGR 21-23E (%)	25.6
PEG ratio (x)	2.6
Implied PER at FY22E (x)	66.6
Value Per Share	2.17

Source: Maybank KE, Company

Discounted Cash Flow

As a cross-check, we also explore the DCF valuation (WACC=6.1%, g=3.5%) methodology. While DCF is more suited to mature, large corporations with stable cashflow generation, we note that CTOS has relatively stable recurring revenue with resilient margins, as supported by a broadly subscription-based model. However, management’s pursuit of opportunistic growth / capex investments and regional expansion (especially acquisitions) may disrupt its cash flow stability. Our DCF computation generates indicative value per share of MYR2.05, broadly in-line with our PEG method. To gain a broader picture of valuation range, we performed a sensitivity analysis with WACC (5.6%-7.6%) and g (2.5-4.5%) which yields value range of MYR1.09-MYR4.49.

Figure 29: DCF Methodology

YE Dec (MYRm)	FY21E	FY22E	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E
EBIT	54.3	71.8	86.6	102.0	119.6	140.1	162.0	186.9	215.2
Dep. & Amort	7.8	9.9	8.8	8.2	7.9	7.7	7.6	7.5	7.5
EBITDA	62.0	81.8	95.4	110.1	127.4	147.8	169.5	194.4	222.6
Change in WC	0.5	-2.4	-0.5	-0.6	-0.6	-0.7	-0.8	-0.9	-1.0
Tax Paid	-3.3	-4.3	-5.1	-6.0	-7.1	-8.2	-39.4	-45.4	-52.2
Capex	-12.1	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0
Unlevered FCF	47.2	47.2	82.7	96.5	112.7	131.8	153.5	178.2	206.4
PV of FCF	47.2	44.0	72.0	78.5	85.6	93.3	101.5	110.0	118.9
Total PV of FCF	610.9								
Terminal Value (TV)	6152.4								
PVTV	3819.4								
Enterprise Value	4430.3								
Net Cash /(debt)	75.5								
Equity Value	4505.8								
Value per Share									2.05

Source: Maybank KE, Company

Figure 30: DCF Parameters

Risk Free Rate (rf)	3.1%	Malaysia 10Y Government Bond Yield
Market risk premium (rM)	7.1%	Malaysia Market Risk Premium
Beta	0.6	Bloomberg: Adjusted Market Beta for CTOS
Cost of Equity (re)	7.1%	CAPM derived
Cost of Debt (rd)	3.8%	Corporate debt estimate
Assumed Target Gearing (x)	43.0%	Assume long term 30% D/E
WACC (%)	6.1%	
Terminal Growth (%)	3.5%	Moderate assumption of <5%

Source: Maybank KE, Bloomberg

Figure 31: DCF Sensitivity Table

		WACC				
	2.05	5.6%	6.1%	6.6%	7.1%	7.6%
LT Growth	4.5%	4.49	3.11	2.37	1.91	1.60
	4.0%	3.22	2.45	1.98	1.66	1.42
	3.5%	2.54	2.05	1.71	1.47	1.29
	3.0%	2.12	1.77	1.52	1.33	1.18
	2.5%	1.83	1.57	1.37	1.22	1.09

Source: Maybank KE, Company

Figure 32: Sector peer comparison

Stock	Ticker	Ctry.	Mkt cap (USD)	Shr px (LC)	PER (x)			2Y CAGR 21-23E	PEG (x)	EV/EBITDA (x)			P/B (x)	
					CY 21E	CY 22E	CY 23E			CY 21E	CY 22E	CY 23E	CY 21E	CY 22E
MY Software Services														
GHL Systems	GHLS MK	MY	524	1.89	64.3	45.1	34.1	37%	1.2	25.2	20.4	16.1	3.9	3.5
Revenue Grp	REVENUE MK	MY	217	1.91	58.7	43.6	39.0	23%	1.9	29.7	23.5	75.3	13.5	10.9
MYEG	MYEG MK	MY	1,688	1.94	21.3	19.8	19.0	6%	3.4	17.5	14.2	12.8	5.2	4.4
CTOS Digital	CTOS MK	MY	984	1.90	77.3	57.1	47.0	28%	2.0	69.8	52.9	43.8	13.1	11.9
Credit Bureau														
Experian Plc	EXPN LN	GB	42,615	3,247	24.8	22.1	19.9	11%	1.9	14.6	12.8	10.1	735.9	587.0
Transunion	TRU US	US	23,599	124.47	33.8	30.3	27.3	11%	2.7	22.1	19.3	17.3	7.6	6.4
Nice Information	030190 KS	KR	1,101	21,300	23.3	20.8	18.3	13%	1.6	12.4	10.6	9.4	4.4	3.8
Credit Bureau	CBA SP	SG	215	1.25	34.4	29.8	27.7	11%	2.6	9.2	8.2	7.7	5.7	5.7
Equifax	EFX US	US	33,246	278.28	37.0	30.4	26.2	19%	1.6	22.1	71.5	55.6	11.0	9.1
Financial Data Solutions														
S&P Global	SPGI US	US	108,508	452.08	34.4	32.2	29.9	7%	4.4	24.1	22.4	20.5	43.5	38.2
Moodys	MCO US	US	71,227	385.39	32.3	31.7	28.9	6%	5.5	24.2	23.7	21.9	31.4	24.9
Thompson Reuters	TRI CN	China	58,993	148.81	78.6	63.5	47.4	29%	2.2	38.1	33.4	27.9	4.7	4.8
MSCI Inc	MSCI US	US	53,659	650.75	65.8	58.2	51.6	13%	4.5	47.6	42.6	38.0	-82.6	-154.8
IHS Markit	INFO US	US	48,160	122.24	38.0	34.4	31.3	10%	3.4	26.3	67.9	51.5	5.3	5.0
Factset	FDS US	US	14,508	385.91	33.7	31.9	30.1	6%	5.5	26.0	21.7	29.1	13.6	12.9
BOL	BOL TB	US	248	10.20	na	na	na	na	na	na	na	na	na	na
GBG	GBG LN	US	2,599	931.50	45.5	40.9	35.5	13%	3.1	33.9	-35.8	-17.7	na	na
Simple Average					43.8	36.7	31.8	15%	3.0	27.3	29.7	29.1	54.4	38.2
Median					34.4	31.9	29.9	11%	2.6	24.2	22.4	21.9	7.6	6.4

Source: Bloomberg, Maybank KE

Risk factors

Regulated by the CRA Act

CTOS Digital's credit reporting business is regulated by the CRA Act, for which it requires a yearly renewable CRA Certificate. CTOS Data Systems and BASIS will see their CRA Certificates expire in Sep 2021 and these will have to be renewed. Failure to renew would have an adverse effect on its ability to carry on operations. Both companies are restricted from engaging in non-credit reporting business without the CRA Registrar's prior written approval, while new digital solutions launched will require prior endorsement from the CRA Registrar. In 2019, the CRA Registrar imposed a 70% foreign shareholding limit on CRAs and stipulated that those with a foreign shareholding of 51% or more may only operate a commercial credit reporting business.

Compliance with the PDPA

CTOS Digital and its associate Experian are subject to the domestic Personal Data Protection Act (PDPA) while BOL is subject to the Thai PDPA. Failure to comply could result in legal, regulatory or contractual liabilities to the respective companies.

Potential anti-competition scrutiny

CTOS Digital holds three of the seven CRA Certificates issued in Malaysia through CTOS Data Systems, BASIS and associate Experian. Moreover, BOL is the largest CRA in Thailand with a more than 50% market share, and is subject to scrutiny from the Thai Trade Competition Act, which regulates anti-competitive conducts in Thailand. CTOS Digital's leading position in both markets may subject it to increased regulatory scrutiny.

Database integrity

The success of CTOS Digital's business very much depends on the integrity and reliability of its information database. Failure to maintain the quality of its databases could subject the group to customer and third-party complaints and lawsuits, which would negatively impact the group's brand and reputation.

Tax incentives under pioneer status

Because of its MSC Malaysia Status, CTOS Data Systems has enjoyed low tax rates in recent years of 6.7%, 5.4% and 5.8% in FY18-FY20 respectively. Under the pioneer status incentives, CTOS Data Systems is entitled to a tax exemption for the tax relief period from 9 Nov 2016 to 8 Nov 2021. However, pursuant to the Grandfathering and Transitional Guidelines which became effective on 1 Jan 2019, such tax relief period will be until 30 Jun 2021. The group plans to seek MDEC's or the relevant authorities' approval for the continuation of the tax incentives in the transitional period from 1 Jul 2021 to 8 Nov 2021 and the renewal of CTOS Data System's pioneer status for an extended relief period for five (5) years until Nov 2026. Failure to renew would result in CTOS Data Systems' statutory income being subject to higher statutory tax rate of 24%. Based on our scenario analysis, imputing a 24% effective tax rate (as opposed to 5.8%) would lower our FY21-23E net profit estimates by 24-38%.

Dependence on SMEs

56.7% of the group's FY20 revenue was derived from Commercial customers, of which SMEs made up 92.4%. Any adverse economic impact from COVID-19 and the prevailing Movement Control Orders (MCOs) could negatively impact its SME business. Management does however highlight that the customer churn rate among its Commercial customers was just 0.2 %-points higher in 2020 relative to 2019 and was flat from Jan to Mar 2021, despite the reintroduction of the MCO from 13 Jan 2021 to 4 Mar 2021.

The COVID-19 impact

In response to COVID-19, the Malaysian Government has imposed a Movement Control Order ("MCO") to varying degrees of severity since 2020. The most severe was the full lockdown from 18 Mar 2020 to 3 May 2020, which resulted in Malaysia's GDP contracting by a hefty 17.1% YoY in 2Q20. Since then, the MCO has been implemented in various forms, but economic activity has been allowed to continue.

In Mar to May 2020, CTOS Digital saw a temporary decrease in revenue, particularly from its Key Account customers, as a result of reduced lending activities. Nevertheless, the blanket loan moratorium from 1 Apr 2020 to 30 Sep 2020 led to a rise in demand for its Comprehensive Portfolio Review and CTOS Portfolio Analytics and Insights solutions, as its Key Accounts customers sought to identify potential risk areas. Its Malaysian operations rebounded strongly from June 2020 onwards and revenue rose 3.2% in FY20.

In June 2020, BNM began providing free access to its CCRIS database and CTOS Data Systems was required to correspondingly reduce its fees for its CTOS Data Systems Reports. This resulted in a corresponding decline in both revenue and cost of sales, and had in fact, resulted in an improvement in gross profit margins. The free access to CCRIS will prevail until end-2021.

During the MCO, the group granted short-term payment deferrals for subscriptions and instalment payment plans to certain CTOS Credit Manager customers whose businesses were impacted. However, as mentioned above, the churn rate was just 0.2 %-points higher in 2020 and flat through to Mar 2021.

Efforts to reduce cost were stepped up in 2020, with the postponement of advertising campaigns and marketing events for its Key Accounts customers. These are expected to gradually resume in 4Q21.

Appendix 1: Board of Directors

Name	Date of Appointment	Designation	Experience
Tan Sri Izzuddin bin Dali (Age: 72)	15 Aug 2014	Independent Non-Executive Chairman	Tan Sri Izzuddin holds a Bachelor of Economics in Public Administration from Universiti Malaya, Malaysia and a Master of Arts in Economics from the Western Michigan University, U.S. He served in the public sector for 34 years in various departments in several ministries in the Government. On top of that, he also sat on the boards of a number of public and private companies in Malaysia including as Independent Non-Executive director of Naim Holdings and director of MMSB Projects. Currently, he serves as the Independent Non-Executive Chairman of TCS Group Bhd, Chairman and director of Prima Gading Corporation Sdn Bhd, director of The Solid Kitchen Manufacturing Sdn Bhd and Chairman of MMSB Projects Sdn Bhd.
Dato' Noorazman Bin Abd Aziz (Age: 65)	24 Feb 2020	Independent Non-Executive Director	Dato' Noorazman is a practising member of the Chartered Institute of Islamic Finance Professionals (CIIF), a member of the Australian Institute of Company Directors and a member of the Institute of Corporate Directors Malaysia. He holds a Bsc Finance degree from Louisiana State University, U.S. He has over 37 years of experience in banking and finance, investments and capital markets. Currently, he is serving in the board of UEM Sunrise Bhd, UEM Edgenta Bhd, Kumpulan Perangsang Selangor Bhd and Hong Leong Financial Group Bhd, which are all listed in Bursa, as well as a director of PLUS Malaysia Bhd. He is also a member of CTOS Nomination and Remuneration Committee.
Datuk Azizan Bin Haji Abd Rahman (Age: 65)	1 Oct 2014	Independent Non-Executive Director	Datuk Azizan obtained a Bachelor of Accounting from Universiti Malaya, Malaysia and obtained an MBA from the University of Queensland, Australia. He has been a Chartered Accountant of the MIA, and a fellow member of CPA Australia. He started his career with BNM, where he worked for 22 years, accumulating a wide range of experience in finance, supervision, and examination while he joined Labuan FSA afterwards. He currently serves as the Chairman of Malaysian Rating Corporation Bhd and MIDF Amanah Investment Bank Bhd. He is also a director of nine (9) financial companies, including OCBC Bank (Malaysia) Bhd and Cagamas Bhd. Currently, he is also the Chairman of CTOS Audit and Risk Committee.
Dennis Colin Martin (Age: 57)	1 Nov 2020	Non-Independent Executive Director and Group Chief Executive Officer (CEO)	Mr Dennis, who is a New Zealand citizen, leads and manages the Group's strategic and financial areas. He is also responsible for the overall regional expansion of the Group and oversees all of the Company's Malaysian subsidiaries. His other board position includes Non-Independent Non-Executive director of BOL, listed in Thailand. He has over 20 years of experience in the credit reporting industry and 16 years of experience in the banking sector. He also sat as a member of the boards of directors of multiple credit bureaux.
Loh Kok Leong (Age: 49)	15 Aug 2014	Non-Independent Non-Executive Director	Mr Loh have both Bsc in Business Administration and MBA from Hawaii Pacific University, U.S. He is a Senior Managing Director at Creador. He is also currently a director of eight private companies, which are investee companies of Creador. In Jan 2000, he has worked in the Boston Consulting Group Sdn Bhd ("BCG") as a Consultant and rose through the ranks to the position of Partner and Managing Director. He then joined Creador in Nov 2013 as a Managing Director and became a Senior Managing Director of the firm in Aug 2018 to present. He is also a member of CTOS Nomination and Remuneration Committee.
Lynette Yeow Su-Yin (Age: 51)	1 Oct 2020	Independent Non-Executive Director	Ms Lynette obtained a Bachelor and Master of Arts in Law from the University of Cambridge, United Kingdom. She has been an advocate and solicitor of the High Court of Malaya and a member of the Malaysian Bar since 1994. She is currently serving as a Consultant in Messrs Sanjay Mohan, an Independent Non-Executive director of Malaysia Building Society Bhd, and a director of MBSB Bank Bhd. She is also an independent member of the SC's Take-Overs and Mergers Committee. She is also currently the chairman of CTOS Nomination and Remuneration Committee, and a member of the CTOS Audit and Risk Committee.
Nirmala A/P Doraisamay (Age: 54)	1 Apr 2021	Independent Non-Executive Director	Ms Nirmala has been a Chartered Accountant of the MIA. She is a Chartered Global Management Accountant and a Fellow of the Chartered Institute of Management Accountants ("CIMA"). She has obtained a Bsc Economics from Universiti Malaya, Malaysia and an MBA from the International Islamic University Malaysia, Malaysia. Nirmala has over 30 years of experience in banking and finance, risk management and advisory work. She was also appointed as an Executive Director at Credence Malaysia Sdn Bhd from Oct 2012 where she held such position until Jul 2019 and afterwards continued to serve as an advisor in the same company from Aug 2019 to present.

Source: Company

Appendix 1: Board of Directors (continued)

Name	Date of Appointment	Designation	Experience
Wong Pau Min (Age: 39)	15 Feb 2021	Alternate director to Loh Kok Leong	He graduated with first class honours in Master of Engineering (Electrical & Information Sciences) from the University of Cambridge, United Kingdom in 2004 and obtained an MBA from Haas School of Business, University of California Berkeley, U.S. in 2010. He currently serves as an Executive Director of Creador and a non-executive director of CIBI. He was appointed as a director of CTOS SG in Apr 2021. Prior to joining Creador in May 2014, he was a Principal at BCG in Kuala Lumpur where he spent nine years in management consulting. He started his career as an Associate in management consulting with BCG in Sep 2004. He left BCG in Aug 2008 to pursue his MBA before returning to BCG in Sep 2010 as a Principal, a position he held until Apr 2014. In May 2014, he joined Creador as an Executive Director (non-statutory director) until today.

Source: Company

Appendix 2: Key Senior Management

Name	Date of Appointment	Designation	Experience
Dennis Colin Martin (Age: 57)	Nov 2020	Non-Independent Executive Director and Group Chief Executive Officer	Mr Dennis, who is a New Zealand citizen, leads and manages the Group's strategic and financial areas. He is also responsible for the overall regional expansion of the Group and oversees all of the Company's Malaysian subsidiaries. His other board position includes Non-Independent Non-Executive director of BOL, listed in Thailand. He has over 20 years of experience in the credit reporting industry and 16 years of experience in the banking sector. He also sat as a member of the boards of directors of multiple credit bureaux.
Chin Kuan Weng (Age: 50)	Nov 2014	Chief Executive Officer (CTOS Data Systems)	Mr Chin obtained his Bachelor of Economics majoring in Industrial Economics from Universiti Kebangsaan Malaysia, Malaysia. He has over 25 years of experience in helping senior leadership roles in business, sales and operational functions for multinationals and local corporates. He was the Chief Operating Officer of CBM from Nov 2008 to Sep 2014, where he was responsible for the management of the business teams, setup and strengthening of core business processes. Since his tenure with CTOS, he has been involved in the management of our Key Accounts customers and acting as the key liaison with the regulators in respect of the business.
Chen Thai Foong (Age: 58)	Apr 2021	Group Chief Financial Officer	Ms Chen is a Chartered Global Management Accountant and a Fellow of the CIMA as well as a Chartered Accountant of the MIA. She obtained an MBA majoring in finance from the University of Dubuque, U.S. She has over 32 years of experience in finance and treasury. One of the notable experiences was as a CFO of DHL Express (M) Sdn Bhd from 2005 to 2008. From Aug 2014 to Apr 2016, she was the Group CFO of Taylor's Education Group in charge of all finance and treasury related matters. She joined CTOS in Apr 2016 as the Chief Financial Officer of CTOS Data Systems. Since joining us in 2016, she has been overseeing all finance related matters of our Group and recently appointed to be the Group CFO.
Tracy Gan Jo Lin (Age: 44)	Jan 2019	Chief Operating Officer (CTOS Data Systems)	Ms Tracy obtained a bachelor's degree in Business Administration (Hons) from University of Northumbria, UK and an MBA from the Nottingham Trent University, Malaysia. She has over 23 years of experience in operations. She joined CTOS in May 2017 as the General Manager in Customer Experience before being promoted to the COO later on. With CTOS, she has been overseeing the strategic operations and customer experience, customer and operations management and business operations improvement. Prior to joining CTOS, she was the Head of Distributor and Modern Trade Management at Maxis, responsible to drive sales growth and reach of distributors, cost optimisation, among others.
Lim Sue Ling (Age: 37)	Apr 2021	Group Head of Risk and Business Compliance	Ms Lim has over 15 years of experience in regulatory compliance and risk management of the credit bureau business and oversees all compliance related matters of our Group. Prior to the appointment, she was the senior Head of Risk and Business Compliance since Sep 2020. She joined the group in July 2008 and have hold various positions across different departments including Special Project Officer, Settlement and Record Update, and Business Compliance.
Benjamin Lau Chi Meng (Age: 37)	Jan 2010	Group General Manager of IT	Mr Benjamin obtained a bachelor's in computer science from Monash University, Malaysia. He has over 15 years of experience in IT. He joined CTOS in Jan 2010 as the Head of IT, been overseeing the management and development of IT infrastructure and security of the Group. He was designated as the General Manager of IT of CTOS Data Systems in Dec 2017 until his recent appointment. Prior to joining the Group, he was a Senior Software Engineer in VersaPAC Sdn Bhd.

Source: Company

FYE 31 Dec	FY19A	FY20A	FY21E	FY22E	FY23E
Key Metrics					
P/E (reported) (x)	na	na	74.6	56.8	47.3
Core P/E (x)	na	na	74.6	56.8	47.3
P/BV (x)	na	na	13.1	12.0	10.9
P/NTA (x)	na	na	17.6	15.7	13.8
Net dividend yield (%)	na	na	0.8	1.1	1.3
FCF yield (%)	na	na	1.2	1.8	2.1
EV/EBITDA (x)	84.8	79.4	64.4	48.5	41.2
EV/EBIT (x)	97.6	93.8	73.6	55.2	45.4
INCOME STATEMENT (MYR m)					
Revenue	129.1	140.5	160.7	186.5	212.9
EBITDA	48.0	50.5	62.0	81.8	95.4
Depreciation	(6.3)	(7.3)	(7.3)	(9.5)	(8.4)
Amortisation	0.0	(0.4)	(0.4)	(0.4)	(0.4)
EBIT	41.7	42.8	54.3	71.8	86.6
Net interest income / (exp)	(1.2)	(4.2)	0.0	0.0	0.0
Associates & JV	0.8	1.8	1.8	1.9	2.0
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	41.2	40.3	56.1	73.7	88.5
Income tax	(2.2)	(2.4)	(3.3)	(4.3)	(5.1)
Minorities	0.0	1.2	1.7	2.2	2.7
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	39.0	39.2	54.5	71.7	86.0
Core net profit	39.5	41.5	54.5	71.7	86.0
BALANCE SHEET (MYR m)					
Cash & Short Term Investments		58.0	75.5	104.3	139.5
Accounts receivable		23.8	27.3	31.7	36.2
Inventory		0.0	0.0	0.0	0.0
Property, Plant & Equip (net)		16.3	21.1	18.6	17.2
Intangible assets		79.1	79.1	79.1	79.1
Investment in Associates & JVs		150.8	150.8	150.8	150.8
Other assets		1.5	1.5	1.5	1.5
Total assets		329.5	355.3	386.0	424.3
ST interest bearing debt		0.0	0.0	0.0	0.0
Accounts payable		21.9	25.8	27.8	31.8
LT interest bearing debt		0.0	0.0	0.0	0.0
Other liabilities		20.0	20.0	20.0	20.0
Total Liabilities		41.5	45.4	47.4	51.4
Shareholders Equity		288.1	309.9	338.6	373.0
Minority Interest		0.0	0.0	0.0	0.0
Total shareholder equity		288.1	309.9	338.6	373.0
Total liabilities and equity		329.5	355.3	386.0	424.3
CASH FLOW (MYR m)					
Pretax profit		40.3	56.1	73.7	88.5
Depreciation & amortisation		7.7	7.8	9.9	8.8
Adj net interest (income)/exp		0.0	0.0	0.0	0.0
Change in working capital		(1.9)	0.5	(2.4)	(0.5)
Cash taxes paid		(2.4)	(3.3)	(4.3)	(5.1)
Other operating cash flow		1.2	1.7	2.2	2.7
Cash flow from operations		51.5	62.8	79.2	94.3
Capex		(4.7)	(12.1)	(7.0)	(7.0)
Free cash flow		46.8	50.7	72.2	87.3
Dividends paid		(10.5)	(32.7)	(43.0)	(51.6)
Equity raised / (purchased)		0.0	0.0	0.0	0.0
Change in Debt		122.3	0.0	0.0	0.0
Other invest/financing cash flow		(160.5)	(12.5)	(7.4)	(7.4)
Effect of exch rate changes		(0.2)	0.0	0.0	0.0
Net cash flow		(2.2)	5.4	21.8	28.2

FYE 31 Dec	FY19A	FY20A	FY21E	FY22E	FY23E
Key Ratios					
Growth ratios (%)					
Revenue growth	16.9	8.8	14.4	16.0	14.2
EBITDA growth	36.1	5.2	22.8	31.8	16.6
EBIT growth	30.7	2.6	26.8	32.4	20.5
Pretax growth	29.7	(2.2)	39.1	31.4	20.0
Reported net profit growth	31.5	0.5	39.2	31.4	20.0
Core net profit growth	33.1	5.1	31.5	31.4	20.0
Profitability ratios (%)					
EBITDA margin	37.2	35.9	38.6	43.8	44.8
EBIT margin	32.3	30.4	33.8	38.5	40.7
Pretax profit margin	31.9	28.7	34.9	39.5	41.6
Payout ratio	55.7	26.8	60.0	60.0	60.0
DuPont analysis					
Net profit margin (%)		27.9	33.9	38.4	40.4
Revenue/Assets (x)		0.4	0.5	0.5	0.5
Assets/Equity (x)		1.1	1.1	1.1	1.1
ROAE (%)		na	na	na	na
ROAA (%)		21.6	15.9	19.3	21.2
Liquidity & Efficiency					
Cash conversion cycle		nm	nm	nm	nm
Days receivable outstanding		30.5	57.2	56.9	57.4
Days inventory outstanding		nm	nm	nm	nm
Days payables outstanding		206.6	381.6	398.4	387.6
Dividend cover (x)		3.7	1.7	1.7	1.7
Current ratio (x)		2.6	2.9	3.6	4.2
Leverage & Expense Analysis					
Asset/Liability (x)		7.9	7.8	8.1	8.3
Net gearing (%) (incl perps)		net cash	net cash	net cash	net cash
Net gearing (%) (excl. perps)		net cash	net cash	net cash	net cash
Net interest cover (x)		10.1	nm	nm	nm
Debt/EBITDA (x)		0.0	0.0	0.0	0.0
Capex/revenue (%)		3.3	7.5	3.8	3.3
Net debt/ (net cash)		(58.0)	(75.5)	(104.3)	(139.5)

Source: Company; Maybank

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Malaysia

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