EDISON

Forward Industries

Initiation of coverage

One-stop shop for outsourced services

Consumer discretionary

Forward Industries has augmented its outsourced manufacturing service offer to include hardware and software design capabilities and the ability to secure listings in major US retail chains. This enhanced offer provides a route for offsetting the declining revenues in the legacy business, which provides carry cases for diabetes equipment, as well as enhancing profit. Our indicative valuation is $1.73/share, which is 16% higher than the current share price.

Year end	Revenue ($m)	EBITDA ($m)	PBT* ($m)	EPS* ($)	DPS ($)	P/E (x)
09/18	34.5	1.0	0.7	0.06	0.00	24.8
09/19	37.4	(0.2)	(0.7)	(0.07)	0.00	N/A
09/20e	34.1	(0.3)	(0.7)	(0.07)	0.00	N/A
09/21e	39.5	1.3	0.9	0.07	0.00	21.3

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Acquisitions substantially expand service offer

The group acquired New York-based design house Intelligent Product Solutions (IPS) in January 2018 and Minnesota-based Kablooe Design in August 2020. These add the capability to design smart electronic products, such as a wearable headset computer for Zebra Technologies (formerly Motorola Solutions) and a compact, portable kidney dialysis machine for Medtronic. The acquisition takes the group into the fast-growing areas of wearables and smart devices, providing a mechanism for offsetting the inevitable decline in the legacy business, which designs, sources and supplies carry cases for glucose monitoring kits and other devices. Demand here is reducing as diabetics shift to real-time monitoring based on embedded devices. The acquisitions also reduce the group's dependence on Forward APAC, the sole supplier of its carry cases, which is majority owned by Forward Industries' CEO and major shareholder Terence Wise.

Creating new revenue streams

The distribution division has established retail channels in the US through which it has started to sell smart lighting and sound products and smart furniture for third parties including UK-based Justwise. In addition, the group is scheduled to launch its own products in FY21, complementing IPS' existing revenue stream from providing hardware and software design services to third parties.

Valuation: DCF indicative valuation of $1.73/share

Our indicative valuation is based on a DCF analysis from FY20 to FY23, with a 9.7% WACC and 1.5% terminal value. Noting the findings of our sensitivity analysis, we believe the key catalysts for raising the share price towards our indicative valuation should be confirmation that management is able to maintain design gross margins at the levels achieved so far in FY20 and evidence that the initiative to distribute smart products is being successful.

2 November 2020

Price	**$1.49**
Market cap	**US$15m**

Net debt ($m) at 30 June 2020 (including line of credit, promissory notes and capital leases)	0.9
Shares in issue	9.9m
Free float	72.4%
Code	FORD
Primary exchange	Nasdaq
Secondary exchange	N/A

Share price performance

%	1m	3m	12m
Abs	9.4	10.9	42.1
Rel (local)	12.5	10.1	32.4
52-week high/low		US$1.85	US$0.90

Business description

Forward Industries provides outsourced design, manufacturing, sourcing and distribution services. It creates innovative products based on IoT and wearable technology for a wide range of global partners. It also sources carry cases for some of the world's leading healthcare companies.

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FY20 results	December 2020

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Forward Industries is a research client of Edison Investment Research Limited

Investment summary

One-stop shop for outsourced services

Forward Industries' distribution division (67% of Q320 revenues) designs, sources and distributes protective carry cases for handheld electronic devices, primarily blood glucose diagnostic kits. During FY19 the division added channel management to its offer. The design division (33% of Q320 revenues) provides design and engineering services for the development of industrial, medical and consumer electronic devices. While the division primarily develops IoT enabled electronic products for third parties, it is developing two products for the group: a sputum washer cup and anti-tremor gloves to help people suffering from Parkinson's disease.

Financials: Design activity to drive profit growth

Forward Industries reported a Q320 revenue decline of 3.6% y-o-y to $9.5m. This drop was the result of a 10% drop in revenues from the distribution of glucose monitoring carry cases and a 19% decline in design revenues, which were partially offset by one-off sales of personal protective equipment (PPE). Reported operating losses widened slightly to $0.2m. The group moved from $0.1m net cash (ie cash less line of credit, promissory notes and capital leases) at the end of FY19 to $0.9m net debt at end Q320, primarily reflecting adverse working capital movements.

Our estimates and DCF analysis assume that revenues from carry cases will decline at an average of 10% y-o-y between FY20 and FY23. Following management guidance, we model a sharp ramp-up in revenues from distributing Mooni and Koble products for third parties ($0.3m in FY20 and $5.5m in FY21) and treat sales of its own products and any revenues from cross-selling between divisions as upside. We assume that gross margins in the carry-case business will be maintained during FY21 at the levels achieved so far in FY20 and that gross margin on design services will increase further in FY21. On this basis, we see group revenues growing at a 5% CAGR between FY19 and FY23, and the group returning to profitability in FY21. Our sensitivity analysis shows that the group should still be profitable if sales of diabetic products decline more quickly than this or if margin compression is substantially more severe, but it is critical to maintain the design gross margin gains achieved during FY20 thus far and for the Koble/Mooni initiative to succeed.

Business risks

We believe the key risks to Forward Industries' business are: 1) **high client concentration**; 2) **reliance on Forward APAC**, which is its sole supplier of carry cases (51% of Q320 revenues); 3) **sourcing from China**: currently all the carry cases are imported from China so there is a risk of tariffs being imposed; 4) **liabilities:** our estimates show that Forward does not have enough cash to repay the promissory note held by Forward APAC by 30 December 2020, requiring the lender to grant yet another extension to the loan; 5) **coronavirus related recession**: this may reduce the amount of cash third parties have available for investment in innovation; and 6) **FX fluctuations**, as a significant portion (42% FY19) of Forward Industries' revenues are generated outside of the US.

Valuation: Indicative valuation of $1.73/share

Our DCF analysis gives an indicative valuation of $1.73/share, which is 16% higher than the current share price. This analysis assumes that management is able to improve on the design gross margin gains achieved so far in FY20 and the Koble/Mooni distribution initiative is successful.

Forward Industries: A portfolio of services

Forward Industries is an international group of companies with more than 60 years of experience designing, manufacturing and supplying high-quality products to world-leading companies. The 'distribution' division (67% of Q320 revenues) designs, sources and distributes carry and protective cases for handheld electronic devices, primarily blood glucose diagnostic kits. Customers include one of the global leaders in diabetes management (not publicly disclosed). During FY19 the division added channel management to its offer, signing an agreement with Swedish company Mooni to launch a range of smart enabled lightning and sound retail products into the US market. The 'design' division (33% of Q320 revenues) was formed through the acquisition of New York-based Intelligent Product Solutions (IPS) in January 2018 and of Kablooe Design in August 2020. This division provides design and engineering services for the development of industrial, medical and consumer electronic devices. Customers include AB Inbev, Boston Scientific, Colorplast, Google, Medtronic, Motorola, PepsiCo and Stryker. While the division primarily develops IoT enabled electronic products for third parties, it is developing two products for the group: a sputum washer cup and anti-tremor gloves to help people suffering from Parkinson's disease.

Manufacturing is contracted out. The carry cases are all sourced from Asia through Forward APAC, which is majority owned by Forward Industries' CEO and major shareholder Terence Wise. The group has started to source electronic products from global contract manufacturer and electronic systems supplier Scanfil.

Exhibit 1: Group timeline

Date	Event
1961	Company founded as a manufacturer and distributer of advertising specialty and promotional products
1989	Acquisition of Forward US, a producer of soft-sided carry cases, which quickly becomes the predominant business
1995	Listed on Nasdaq
1997	Disposal of advertising specialty and promotional products business
2001	Formation of Forward Switzerland
March 2012	Initial Buying Agency and Supply Agreement with Forward APAC
September 2013	First purchases directly from Forward APAC
June 2015	Terence Wise and Michael Matte appointed CEO and CFO, respectively
January 2018	Acquisition of Intelligent Product Solutions
January 2019	Commencement of distribution agreement for Mooni AB International
August 2020	Acquisition of Kablooe Design

Source: Edison Investment Research

As of 12 December 2019, Forward Industries had 73 full-time employees. Most of these were employed by the design business in New York, which is where the group is headquartered. There is also a small team based in Switzerland to serve European headquartered OEMs. The Kablooe Design business adds around another 10 people, who are based in Minnesota.

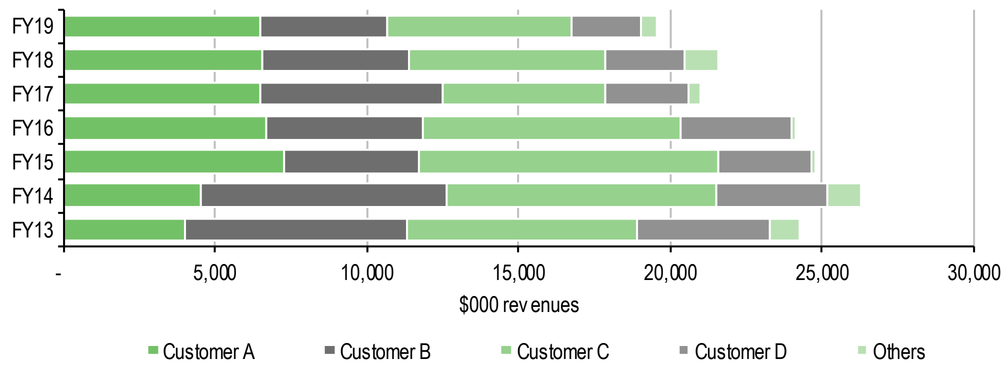
Distribution division: Leader in glucose monitor carry cases

The majority (77% in Q320) of the distribution division's revenues are derived from the development and distribution of protective carry cases for glucose monitoring kits. These are sold to multi-national original equipment manufacturers (OEMs) of glucose monitoring kits. These cases are customised with the manufacturer's logo and designed to hold an electronic blood glucose monitor, testing strips and lancets. The selling prices range from $0.60/unit to $7.00/unit, with the average price close to the bottom end of the range. Most of the OEMs package the case with diabetic kits, but a few are sold as an accessory to the consumer through internet retailers. Four OEMs accounted for 93% of Forward Industries' diabetic business in Q320 (see Exhibit 2).

The remaining revenues in this division (23% in Q320) are typically derived from the sale of cases and protective solutions to OEMS for portable electronic devices such as bar code scanners, cellular phones, GPS devices, tablets and cameras and other products such as sporting and recreational products and firearms. Unusually, in Q320, the division sold $0.8m PPE it had sourced from a US manufacturer for supply to a US hospital. This opportunistic activity represented 15% of divisional revenues.

Forward Industries does not manufacture the carry cases itself and sources them from independent producers in Asia through Forward APAC. Management states that this is substantially less expensive than maintaining its own sourcing operation. It also reduces working capital requirements. Under a Buying Agency and Supply Agreement contract which ends in October 2020 and is likely to be extended, Forward Industries purchases products at Forward APAC's cost in addition to paying to Forward APAC a monthly service fee equal to the sum of: 1) $100,000; and 2) 4% of 'adjusted gross profit'. This is defined as the selling price less the cost from Forward APAC. The service fees paid totalled $338k in Q120, equivalent to 7.2% of distribution revenues (6.4% in FY19 and 5.9% in FY18). Since the proportion of fixed payments as a percentage of total fees is high, the agreement compounds margin compression when revenues decline and margins are under pressure as has been the trend for the last few years.

Exhibit 2: Customer concentration in the diabetic business



Source: Forward Industries data

During FY19 the division added channel management to its offer, signing a distribution agreement with Swedish company Mooni to launch a range of smart lighting and sound products into the US market. It also has an agreement to launch smart furniture from Koble into the US market. (Koble is a brand owned by Justwise, which Terence Wise is chairman of.) While the division has secured listings with several major US retail chains including BestBuy, BJ's Wholesale Club, Costco and Staples, and the initial response in Q120 was favourable, roll-out in stores has been delayed by the coronavirus pandemic. We expect that divisional revenues will include material fees from distribution to retailers from Q121 onwards. The group is minimising the additional fixed costs associated with the new distribution capability by appointing commission only manufacturer's representatives who have existing relationships with the big box retailers that it is targeting in the US and Canada.

Design division: Hardware and software design and engineering solutions

The design division was formed through the acquisition of IPS in January 2018 and augmented through the acquisition of Kablooe Design in August 2020. IPS was founded in 2008 by two former executives of Symbol Technologies (now Zebra Technologies). It now employs over sixty people, primarily software and hardware engineers. It generates revenues from the provision of design and engineering services for businesses developing industrial and consumer electronic devices. It does not capture any royalties on sales of any products it works on or any licence fees for its IP. The division offers both full hardware and software product development from ideation, design and engineering through to manufacturing support as well as targeted design and engineering support for clients to complement their in-house development teams. Volume manufacturing is outsourced to multi-national contract manufacturer Scanfil. While all the clients currently are based in the US, they range from large multinationals to mid-sized companies and start-ups. The markets served are also diverse: automotive; retail; consumer; biomedicine; field service; construction; logistics; security; entertainment; government and defence, with a common thread of adding interfaces and wireless connectivity to add intelligence to objects. Projects include:

- **A wearable headset computer for Zebra Technologies** (formerly Motorola Solutions) that included voice recognition, WLAN/BT, 9-axis head tracking, wireless communications and a 15″ micro display. IPS coordinated every aspect of development, including budget management, scheduling, quality assurance and testing and validation as well as proof of concept evaluation, component selection, printed circuit board (PCB) layout and creating the documentation package as part of the transfer to the manufacturing partner. IPS was also responsible for coordination between Motorola, its technology partner Kopin and external software and hardware vendors. This product was previously commercially available but has been discontinued for a couple of years.
- **Smart keg for AB InBev**. This is an IoT enabled beer dispenser for the home with a companion smartphone app that allows the consumer to check on beer levels and drinking temperature remotely. IPS engineered and built production prototypes of the device, which was a proof-of-concept demonstration system.
- **Smart pill bottle for AdhereTech**. This is an IoT enabled personal medical device that detects how much medication a patient has taken and when, alerting the person and associated medical support personnel if the medication has not been taken correctly. This data is monitored in real-time and wirelessly transmitted and stored in the cloud. IPS achieved a 1:2 volume reduction from prototype to final design. This product is commercially available.
- **Checkpoint solution for L-3 Security and Detection Systems**. This is used mainly in airports and other major public areas. IPS provided design and engineering services for key components of the checkpoint solution including the ProVision2 people scanner, the ClearScan checkpoint baggage scanner and the IntelliCore software solution.

Although the division boasts an impressive list of clients, it suffers from relatively high client concentration. In Q320 the top four clients generated 55% of revenues. This means that new large contracts or the termination of existing ones may result in short-term performance volatility.

Exhibit 3: Smart beer keg for AB InBev

Source: Forward Industries

Exhibit 4: Smart pill bottle for AdhereTech

Source: Forward Industries

Although the division primarily helps develop electronic products for third parties it is developing two products for the group. These are a sputum wash cup and anti-tremor gloves to help people suffering from Parkinson's disease. The sputum wash cup is scheduled for launch in early FY21. No details are available yet as this is commercially sensitive. The sputum wash cup may need FDA approval, the anti-tremor gloves will not.

Kablooe Design

Kablooe Design provides research, design and development services to customers in the medical and consumer sectors. It is very similar to IPS with regards to the services it offers and financial model but differs in that its focus is on medical devices with clients including Medtronic, Boston Scientific, Coloplast, AtriCure, Cega Innovations and Rapid Diagnostek. Kablooe is located in Minneapolis, which is the US's third largest medical device development hub. It employs around 10 people.

Historical revenue and profits have not been disclosed. The total consideration payable is up to \$1.6m. This consists of an initial payment of \$0.35m cash and 300,000 shares (equivalent to \$0.42m at the share price at the time of completion), conditional deferred consideration of up to \$0.6m and the assumption of \$0.27m of liabilities.

One example of work that Kablooe has undertaken in the medical devices sector is for NxThera (now owned by Boston Scientific), a then start-up medical device firm that had invented a revolutionary tissue ablation technology using steam to treat benign prostate enlargement. NxThera partnered with Kablooe to take it from a concept to a saleable device, improving functionality and usability along the way. It created a solution that incorporated a needle actuated by a trigger that protruded at a perpendicular angle to the main catheter. In addition, the handle of the device incorporated the ability to flush the treatment area, as well as including a radio frequency (RF) coil to create the steam for the ablation procedure. This enabled the hand-held portion of the system to perform all the necessary functions of the procedure without removing it from the patient. This results in a shorter, simpler medical procedure, thus creating a significant competitive advantage for NxThera while saving patients and insurers time and money in medical costs and recovery time.

Exhibit 5: Tissue ablation device for NxThera

Source: Forward Industries

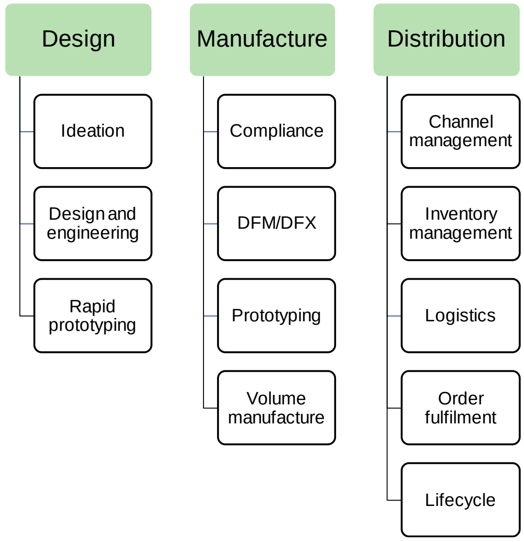
Strategy

Broadening service offer and markets served

The combination of the group's carry case distribution business and the design businesses has created a one-stop shop for smaller companies that do not have sufficient scale or financial resources to develop products internally and are looking for integrated product design and manufacturing solutions with attractive pricing. Importantly it reduces the group's exposure to the diabetes carry case market, which is declining (see below) by taking it into diverse markets utilising IoT capability. Management is keen to promote cross-selling opportunities between the two divisions, with non-healthcare distribution clients potentially using IPS's and Kablooe's design services and IPS's and Kablooe's clients benefiting from the distribution business's ability to manage outsourced manufacturing in low-cost production regions. Two years on from the IPS acquisition, customers are discussing cross-selling opportunities, but this activity has not yet generated material revenues. Similarly there is no evidence as yet of new customers that have been attracted by the integrated service offer. Our estimates treat any cross-selling as upside.

The move into channel management during FY19 also augments the original service offer. However, we note that it is difficult to assess how successful this additional service will be in attracting new customers because one of the first two brands to use, Koble, is are linked to CEO Terence Wise's Justwise operation and because the coronavirus pandemic has reduced retail footfall.

Exhibit 6: Group expertise



Source: Edison Investment Research

Improving profitability of design division

The design division reported a $1.7m operating loss in FY19 because of project overruns and an increase in bad debt provision. Management intervention transformed this situation to a $0.4m operating profit in Q120 and enabled the division to break even in Q320, despite the decline in revenues related to the coronavirus pandemic.

Reducing reliance on Chinese manufacturers

Forward Industries currently imports all of its carry cases from China through Forward APAC through an agreement that stipulates that Forward APAC acts 'as the company's exclusive agent to arrange for sourcing, manufacturing and exporting the Company's distribution products.' While

Forward Industries was not affected by the US raising tariffs on c $1bn of med-tech imports from China (ie around one-fifth of US med-tech imports) in July 2018, it remains very exposed to the potential of additional international tariffs resulting from the ongoing trade war between the US and China. Higher tariffs would be particularly damaging because if Forward Industries decided to absorb the higher procurement costs to retain customers, this action would further compress margins. Forward APAC is currently seeking alternative manufacturers in Vietnam and Cambodia.

Market

Distribution: A challenging outlook for diabetic products

While the increasing number of diabetic patients worldwide should result in more units of diabetes monitoring units being sold, pricing pressure on carry cases is, in our view, likely to continue. Moreover, technological advances in the monitoring units themselves are likely to reduce the proportion of units needing dedicated carry cases.

- **The number of diabetic patients has increased steadily in recent decades and is expected to rise significantly further in the long term.** According to the World Health Organisation, the number of people with diabetes globally has risen from 108 million in 1980 to 422 million in 2014, ie from 4.7% of the global population aged 18+ years in 1980 to 8.5% in 2014. Growth has been strongest in middle- and low-income countries reflecting a switch to a more westernised diet. The number of patients globally is expected to grow steadily. In the US, the number of patients (18+ years) with diagnosed diabetes quadrupled from 5.5m in 1980 to 21.9m in 2014, rising from 3.5% of the US population to 9.1%. The number of US diabetic patients is expected to increase further to 39.7 million (13.9%) in 2030 and to 60.6 million (17.9%) in 2060.[1]
- **The profitability of the blood glucose monitoring market has been under pressure.** The diabetes unit of Roche, the largest maker globally of glucose monitors, experienced a c 30% revenue decline over the period 2008–17, reflecting a decrease in reimbursements that customers received for diabetes products sold under the Affordable Care Act in the US. Bayer sold its diabetes unit in 2016. Johnson & Johnson sold its diabetes unit (LifeScan) to US private equity firm Platinum Equity in June 2018. We believe the focus on margin improvement in the industry will remain high, resulting in margin compression for glucose monitor carry cases.
- **Technological changes are likely to have a large impact on the market**. Several non-invasive technologies are being developed, including smart contact lenses, fingertip devices, earlobe devices, saliva analysers and wearables. For example, Roche Diabetes Care currently distributes the Eversense continuous glucose monitoring system from Senseonics, which is based on an implantable sensor that can measure glucose values for up to 180 days. The sensor communicates with a rechargeable wearable smart transmitter, which alerts the person with diabetes when glucose levels become too high or too low. Additionally, glucose data is transmitted to a smartphone app. The adoption of these technologies is likely to reduce the need for carry cases for the equipment used in finger-prick blood tests.
- **The diabetes monitoring market is expected to continue to grow with the most innovative solutions likely to experience the strongest growth**. A report published by Transparency Market Research in May 2020 noted that the global diabetes devices market was valued at US$41.8bn in 2018 and was projected to expand at a CAGR of 6.4% from 2019 to 2027. However, Decision Resources Group estimates that while the market for the most innovative continuous glucose monitoring will achieve double-digit growth rates, the market for

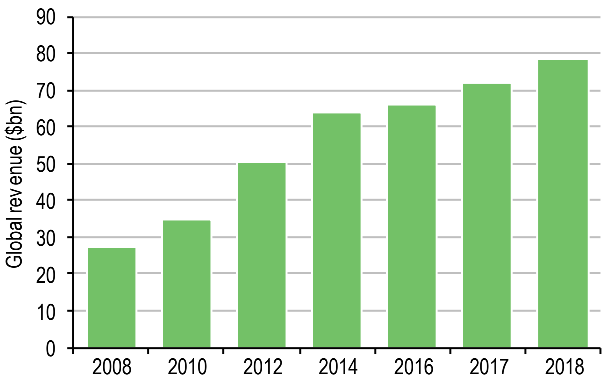
1 Projection of the future diabetes burden in the United States through 2060, Ji Lin, Theodore J. Thompson, Yiling J. Cheng, Xiaohui Zhuo, Ping Zhang, Edward Gregg and Deborah B. Rolka, *Population Health Metrics* 16(1):9, December 2018

traditional glucose monitoring (where Forward Industries operates) will grow only c 1.1% pa through 2026.

Competitive position

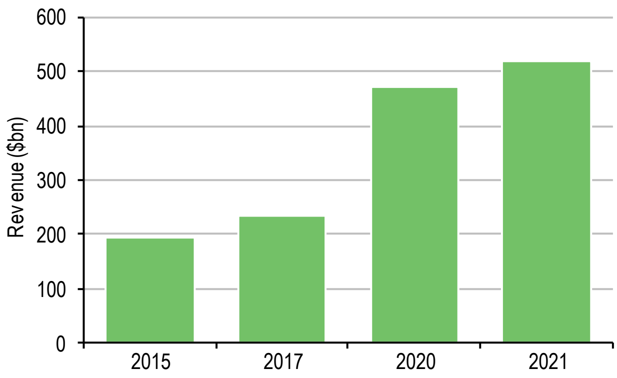
The division operates in a competitive environment with low barriers to entry. The ability to differentiate the product offering is low. The division competes through provision of a product design capability (albeit out-sourced), rapid response time to customer requests for proposals and product shipment, reliable product delivery and product quality and competitive pricing. The division benefits from its relationship with Forward APAC, which is able to source product from manufacturers in Asia on attractive terms. Additionally, since Forward APAC has a local presence in China it is well placed to monitor quality and product shipments and to identify suppliers. Management estimates that it has around 20% share of the global market for diabetes test kit cases.

Exhibit 7: Global pharmaceutical revenue from anti-diabetic products 2008–18



Source: Statista

Exhibit 8: Global revenue IoT and analytics 2015–21



Source: Statista

Design: Benefiting from IoT and wearables growth

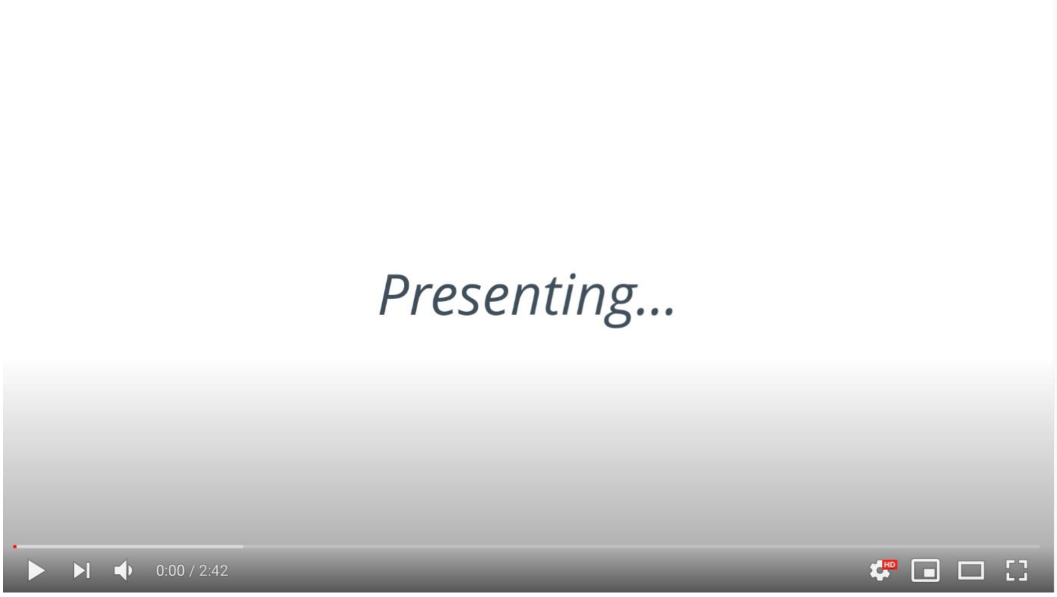
IPS's capabilities place it in a good position to benefit from strong growth in the IoT, wearables and security/screening products. The large size and strong growth of these sectors mean that even a small participation in the growth represents a substantial revenue opportunity for IPS. Some of the key industry growth trends IPS is exposed to include:

- **IoT market:** An update to International Data Corporation's 'Internet of Things Spending Guide' published in June 2020 shows IoT spending growing 8.2% y-o-y to $742bn in 2020, which is down from 14.9% growth forecast in its November 2019 release. Nevertheless, IDC expects global IoT spending will return to double-digit growth rates in 2021 and achieve compound annual growth of 11.3% over the 2020–24 forecast period. A large proportion of the IoT market is dominated by enterprises spending on applications in the manufacturing, automotive, logistics, utilities and smart cities sectors. The consumer IoT market includes applications such as wearables (eg Fitbit, Apple Watch) and domestic automation (eg Nest temperature controls, home security).
- In July 2020, IDC noted that the global wearables market remained one of the few device markets still expected to grow in 2020. This was attributable to hearables (smart headphones) being used to maintain personal space. Additionally, vendors continue to launch new fitness trackers and smartwatches to an interested audience.

Competitive position

The barriers to entry for the design division are significantly higher than the distribution division and are based on engaging staff with the appropriate expertise. There are numerous competitors offering design, engineering and product development services. These include Embien Technologies, Optimal Design, Alloy, Kinneir Dufort, IDC and Bluefrog Design. However, IPS is unusual with regards to the range of technologies offered: software engineering, user interface design, mechanical engineering, electrical engineering, embedded systems, manufacturing services, industrial design, systems architecture and marketing. It is able to offer this range of capabilities because of the size of its engineering team. Being able to offer this range of skills means that, if required, it can take responsibility for all aspects of a product's design and manufacture. This speeds up the development process and simplifies any bug fixing. An example of this is shown in Exhibit 9. The division also benefits from its track record of past projects with globally recognised companies. We note that the decision to develop products for the group as well as developing products for third parties presents significant scope for launching differentiated devices.

Exhibit 9: IPS's integrated product design and development offer



Source: Company data

Management

Terence Wise was appointed CEO of Forward Industries in June 2015 following a public battle with the previous board. He has introduced the strategy discussed previously, which is intended to deliver medium-term growth in revenues and profits despite the structural decline in demand for diabetes carry cases.

Terence Wise, CEO and chairman of Forward Industries: Mr Wise founded Justwise, an international sourcing company that supplies furniture and lighting products to numerous UK High Street chains, in 1977 and remains its principal and chairman. In addition, he has significant shareholdings in two furniture manufacturing plants in China and is a principal of Forward APAC, a buying and supplier agent based in the Asia-Pacific region.

Anthony Camarda, CFO: Mr Camarda was appointed in June 2020, following the board's decision to relocate the company's finance and ancillary administration to Long Island, New York. Prior to his appointment Mr Camarda served as executive accounting support at Drive DeVilbiss Healthcare, where he provided accounting and business strategy services. From October 2013 until August 2019 he held various leadership positions at The Nature's Bounty Co., including vice president of financial planning and analysis. Prior to that, he occupied various leadership roles in finance and accounting at Motorola Solutions (formerly Symbol Technologies).

Sensitivities

In our opinion the key risks to Forward Industries' business are:

- **High client concentration means the loss of a single customer could affect the business significantly.** During Q320 the top four clients generated 72% of the total distribution revenues, the largest client 22%. The client concentration is less pronounced in the design division where the top four clients accounted for 55% of Q320 revenues and the top client 29%.
- **Relationship with Forward APAC:** Forward APAC is the company's exclusive supplier for carry cases. The current contract ends in October 2020 and is likely to be extended. Since the terms of the agreement are a key driver of the profitability of the distribution division, any change would have a material impact on group profits. In our view the risk of a change in the terms would become more likely if there was a change in the ownership of either Forward Industries or Forward APAC, since Forward Industries' CEO and majority shareholder Terence Wise holds a 16.9% stake in Forward Industries and is also the controlling shareholder of Forward APAC. Jenny Yu, a managing director of Forward APAC, has an 11.7% shareholding of Forward Industries. In addition, we note that in order to finance the acquisition of IPS, Forward Industries issued a $1.6m promissory note payable to Forward APAC. Forward APAC also sources product for Mooni, which it supplies to Forward Industries and others. Terence Wise is also chairman of Justwise, which is the brand owner of Koble smart furniture and UK distributor of Mooni furniture and has significant shareholdings in two manufacturing plants in China. These relationships potentially present corporate governance issues.
- **Sourcing from China:** Forward Industries imports all of its carry cases from China. This exposes the business to the risk of rising international tariffs as a result of the ongoing trade war between the US and China and a negative impact on revenues or margins. Forward APAC is currently evaluating suppliers elsewhere in the Asia-Pacific region.
- **Liquidity risk**: The company was cash-negative in FY19 because the project overruns and poor debtor control in the design division resulted in large operating losses. The company was also cash-negative for the nine months ending June 2020, through a combination of operating losses and a substantial jump in accounts receivable. While we model the company as cash-positive for FY21 as a whole, this depends on gross margins being maintained in the design division and a normalisation of working capital movements. Our estimates show that there is sufficient cash at the end of FY20 to repay the $1.3m letter of credit from TD Bank in its entirety by the end of FY20, but the promissory note from Forward APAC cannot be repaid in full from the company's operating cash-flows until FY22. At end FY19 the group was in violation of the required debt-service ratio covenants, which are measured annually, and TD Bank granted a waiver of the violation. We note that the Q320 SEC filing states that there is a likely risk of failing the annual covenant testing at 30 September 2020 for the line of credit, such that the lender may demand payment in full. While the $1.6m promissory note from Forward APAC has been extended formally only as far as 30 December 2020, since the maturity date of this note has been extended on several occasions to assist liquidity, we believe that if required, it is likely that Forward APAC will extend the maturity date at least until end FY21.
- **Coronavirus related recession:** While both the distribution and design businesses continued to operate during lockdown, with employees working from home, sales cycles have become longer. It is possible that a recession will reduce the amount of cash available for investment in innovation and foster a more risk-adverse approach, which will have a negative impact on the design division. On the other hand, some companies may see new product introductions and

modifications to existing designs that reduce the cost of manufacture as a way of stimulating demand for their products.

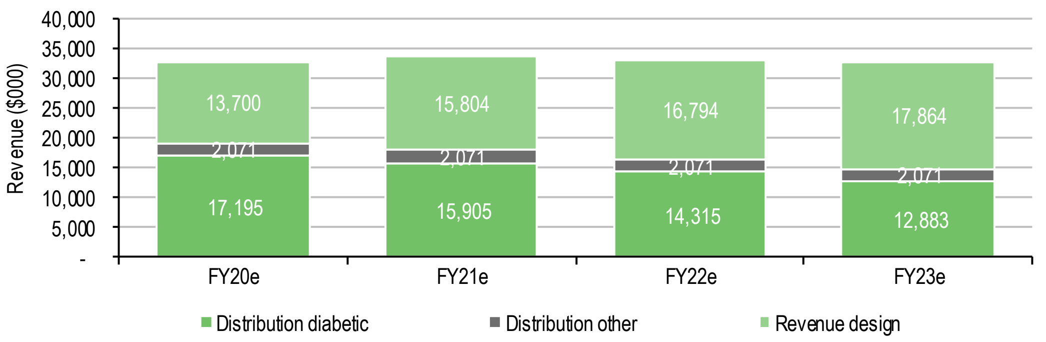
- **FX:** Around half of Forward Industries' revenues are generated outside of the US so the company is exposed to fluctuations in foreign exchange rates, particularly the euro, Swiss franc and sterling. Purchases from Forward APAC are denominated in US dollars.

Financials

Q320 results overview

Forward Industries reported a Q320 revenue decline of 3.6% y-o-y to $9.5m. Continued pricing pressure and reduced underlying demand from most of its major diabetic product customers resulted in a 10% drop in revenues from the distribution of glucose monitoring carry case customers. This was offset by opportunistic sales of PPE worth $0.8m, giving a 6% increase for the division as a whole to $6.4m. Revenues from the design division dropped by 19% as demand for its services were reduced and anticipated projects delayed.

Exhibit 10: Breakdown of revenue by division and product



Source: Forward Industries data, Edison Investment Research

Reported group gross profit decreased by 6% y-o-y to $1.8m, with gross margin decreasing by 0.5pp to 18.6%. Continued pricing pressure and a shift to lower margin cases was partly mitigated by higher gross margins on PPE, resulting in a 0.6pp reduction in divisional gross margin to 14.7%. Design gross margin rose from 25.0% to 26.5% reflecting continued efficient management of projects.

Reported operating losses widened by $0.1m from Q319 to $0.2m. Operating losses from the distribution division narrowed by $0.1m to $0.2m because of lower sampling and prototype costs. Conversely the design division moved from a $0.2m operating profit in Q319 to break-even as a result of the lower revenues and increased payroll related costs.

The group moved from $0.1m net cash (ie cash less line of credit, promissory notes and capital leases) at the end of FY19 to $0.9m net debt at end Q320. The key elements of this movement were a $1.4m increase in accounts receivable and a $0.2m deferred consideration payment, partly offset by $0.9m inventory reduction. Capex was minimal, as in the prior year period. While the balance sheet at the end of Q320 showed $3.1m cash, this was offset by $1.0m drawn on the line of credit, $1.6m of promissory notes agreed with Forward APAC and a $1.4m loan under the Paycheck Protection Program (PPP). At the end of Q320 the effective rate of interest on the line of credit was 4.0% and in early August the company had $0.3m credit available. This facility has been extended to end May 2021. Repayment of the $1.6m promissory note agreed with Forward APAC to finance the IPS acquisition has been extended again, this time to 30 December 2020. This promissory note has an interest rate of 8% pa. Although the maturity date of this note has been extended on several occasions to assist liquidity, management plans to fund the repayment on maturity using existing cash balances and/or obtaining an additional credit facility at a lower interest rate than the promissory note. The company intends to apply for forgiveness of the PPP Loan.

Revenue growth, margin expansion drive EPS growth

Our estimates and DCF analysis make the following assumptions:

- **Distribution revenues**: Revenues from glucose monitoring carry cases declined at a CAGR of 3.5% between FY13 and FY19. We do not expect this trend, which reflects a combination of a shrinking market and pricing pressure, to reverse, and model a year-on-year decline at 7.5% in FY21, then 10% through to FY23. There is little relevant historical data regarding revenues from distribution of Mooni and Koble products because of the coronavirus pandemic. We model $1.1m sales in FY20, of which $0.8m is sales of protective equipment, $5.5m sales in FY21 followed by 100% growth in FY22 and 10% growth in FY23.
- **Distribution margins**: We model gross margin in the historical distribution business at 13.5% for both FY20 and FY21, in line with reported margin during the first nine months of FY20. We follow this with margin compression of 0.5pp in both FY22 and FY23. We model gross margin on Koble and Mooni sales at 20% in FY20 and 25% thereafter. We model divisional sales and marketing and general and administrative costs at underlying Q320 levels as these already include the additional resource associated with Koble and Mooni distribution.

Exhibit 11: Channel management for Mooni products represents new revenue stream

Source: Forward Industries

Exhibit 12: Koble products complement Mooni offer

Source: Forward Industries

- **Design revenues**: On a pro-forma basis, divisional revenues increased by 8% in FY18 and 6% in FY19. We model revenues reducing by 7% during FY20 (ie assuming a pick-up in Q4), then growing by 2% in FY21 and 5% thereafter, ie we treat any revenues from cross-selling as upside. We note that the division should benefit from structural growth trends such as IoT products, wearables and security/screening applications. There is no historical data regarding the level of sales/fees achievable from sales of the sputum washer cup and similar products, which we treat as upside to our forecasts and DCF calculation. We model $2.0m revenues from the Kablooe acquisition in FY21, rising by 15% y-o-y in FY22 and FY23.
- **Design margins**: We assume that divisional gross margin on design services, excluding those provided by Kablooe) will remain close to the 28% achieved in the nine months ended June 2020 during FY20, then rise to 30% thereafter. Noting that Kablooe's focus on the healthcare sector enables it to achieve a higher margin than IPS, we model Kablooe gross margins at 35% in FY21, declining to 30% thereafter. We assume that Kablooe's operating costs will reduce post-acquisition, with outsourced items such as accounting and payroll handled by Forward. We model Kablooe EBITDA at the level required to trigger the full deferred consideration payments ie $0.3m in the first year post-acquisition, $0.4m in the second year and $0.5m in the third year.

- **Interest:** We assume that the line of credit is repaid during FY20 using existing cash in hand and repayment of the promissory note to Forward APAC is postponed until FY22. Although the design segment customer owing $1.6m to the company has signed an interest-bearing promissory note agreeing to repay the debt by March 2021, we treat any repayments as upside.
- **Taxes:** We assume that the group will not pay any taxes until at least FY22 because of large cumulative losses.
- **Working capital:** We model the ratio between inventory, receivables and payables and total revenues at similar levels to FY19. This assumes that management is able to negotiate the same favourable terms with suppliers of Koble and Mooni products that it has with Forward APAC and that the anomalous position at end Q320 normalises.
- **Capex:** We do not expect any material requirement for capex going forward.
- **Deferred consideration:** We assume that as IPS's profits are insufficient to trigger the final tranche of performance related deferred consideration, only the $300k fixed element will be paid during FY20. We model Kablooe's EBITDA going forward at a level sufficient to trigger each of the tranches of deferred consideration.

Based on these assumptions, our estimates project group revenue growing at a 5% CAGR between FY19 and FY23. The improvement in gross margin in the design division helps return the group to profitability in FY21, generating $0.07 EPS for the year. We expect free cash to be positive in FY21. We believe that there is scope to extend the maturity date of the promissory note to Forward APAC further if required, and model repayment of the promissory note in FY22 and of the line of credit in FY20. On this basis we do not expect the need for additional financial resources to finance ordinary activity.

Sensitivity analysis

We present a sensitivity analysis to show the impact of varying some of these assumptions. This shows that the group should still be profitable if revenues from sales of diabetic products decline at 20% per annum and if margin compression in this product category is more severe than our model. It shows that a return to profit is predicated on the success of the Koble/Mooni retail initiative, and while recovery is not dependent on the own products (sputum washer cup and anti-tremor gloves) initiative, outperformance in this higher-margin (30% gross margin) product category has a marked impact on profitability. The analysis demonstrates how important it is to avoid a recurrence of project overruns in the design division with the associated reduction in gross margin.

Exhibit 13: Sensitivity analysis

Y-o-y decline in diabetic revenues FY21, FY22 and FY23	**-5.0%**	**-10.0%**	**-15.0%**	**-20.0%**
FY21e group revenues ($k)	39,911	39,051	38,191	37,331
CAGR group revenues FY19–23e	5.8%	4.5%	3.3%	2.2%
FY23e EPS (cents)	0.15	0.15	0.14	0.13
Y-o-y decline in diabetic gross margin FY21, FY22, FY33	**-0.5%**	**-1.0%**	**-1.5%**	**-2.0%**
FY23e EPS (cents)	0.14	0.12	0.10	0.07
IPS gross margin FY20-FY23	**22%**	**25%**	**27%**	**29%**
FY23e EPS (cents)	0.02	0.07	0.10	0.13
FY21 revenues from Koble/Mooni ($k)	**0**	**500**	**2,500**	**5,000**
CAGR group revenues FY19–23e	-3.2%	-2.4%	0.6%	4.0%
FY21e EPS (cents)	(0.05)	(0.03)	0.04	0.13
FY21 revenues from own products ($k)	**0**	**500**	**2,500**	**5,000**
CAGR group revenues FY19–23e	4.7%	5.1%	6.6%	8.3%
FY21e EPS (cents)	0.15	0.17	0.25	0.35

Source: Edison Investment Research

Valuation

DCF analysis

Exhibit 14: DCF valuation

	($000)
Sum discounted cash flow FY20–23e	2,623
Present value of terminal value	14,359,
Enterprise value (end FY19)	**16,982**
+ net cash (end FY19)	72
Equity (end FY19)	**17,054**
Number of shares	9.9m
Value/share ($)	**1.73**

Source: Edison Investment Research

We have adopted a DCF valuation approach to capture the long-term evolution of profitability of Forward Industries. Our indicative valuation of $1.73 per share is based on a WACC of 9.7% (risk free rate of 3%, beta of 1.0, cost of debt of 8%, equity risk premium 6%, gross debt/assets 39%) and a terminal growth rate of 1.5%. We have not included any tax cash outflows during FY20–23 because of significant cumulative losses ($11.3m accumulated deficit at FY19 year-end), but we include a 20% tax rate for the purpose of the terminal value calculation. As shown in Exhibit 15, using a WACC range of 6.7–10.7% (with terminal growth rate unchanged) would provide an equity valuation range per share of $1.53–2.78. Similarly, maintaining the WACC at 9.7% and varying the terminal growth rates from 0.5–2.5% would yield an equity value of between $1.56 and $1.94.

Exhibit 15: Indicative valuation range ($/share)

		Terminal growth rate				
		0.5%	**1.0%**	**1.5%**	**2.0%**	**2.5%**
WACC	6.7%	2.36	2.55	2.78	3.06	3.41
	7.7%	2.02	2.16	2.32	2.51	2.73
	8.7%	1.76	1.86	1.98	2.12	2.27
	9.7%	1.56	1.64	1.73	1.83	1.94
	10.7%	1.39	1.46	1.53	1.61	1.69

Source: Edison Investment Research

Noting the findings of our sensitivity analysis, we believe the key catalysts for raising the share price towards our indicative valuation should be confirmation that management is able to maintain design gross margins at the levels achieved so far in FY20 and evidence that the initiative to distribute smart furniture is being successful.

Peer comparison

The nature of Forward Industries' business model and the niche businesses in which it operates mean we have not been able to identify a listed entity that is fully comparable. Instead we present several competitors that are engaged in either distribution/sourcing or in design/engineering. UK-based Bunzl supplies items such as food packaging, cleaning and hygiene materials and personal protection equipment to businesses. Benchmark Electronics, Celestica, Flex, Halma, Jabil, Plexus and Sanmina all provide design and engineering services to the electronic industry, though, unlike Forward Industries, they also own volume manufacturing capacity.

Exhibit 16: Listed peers

Name	Market cap ($m)	EV/sales 1FY (x)	EV/sales 2FY (x)	EV/EBITDA 1FY (x)	EV/EBITDA 2FY (x)	P/E 1FY (x)	P/E 2FY (x)	EBITDA margin 2FY (%)
Distribution and sourcing								
Bunzl plc	10,546	1.0	1.0	11.6	11.9	17.0	17.8	8.5
Design, engineering and manufacture								
Benchmark Electronics Inc	752	0.3	0.3	-	-	23.3	16.8	-
Celestica Inc	790	0.2	0.2	3.1	3.1	6.6	6.5	5.4
Flex Ltd	6,857	0.4	0.4	6.8	5.9	12.5	10.3	6.1
Halma PLC	11,680	7.0	6.5	29.7	26.7	12.5	39.0	24.6
Jabil Inc	4,961	0.2	0.2	3.6	3.4	8.1	7.6	7.0
Plexus Corp	1,997	0.6	0.5	8.4	7.8	15.6	13.8	6.6
Mean		0.3	0.3	10.3	9.4	13.1	15.7	9.9
Forward Industries	15	0.4	0.4	(58.5)	11.5	(20.4)	20.6	3.2

Source: Refinitiv, Edison Investment Research. Note: Prices at 30 October 2020. Grey shading indicates exclusion from mean.

Forward Industries trades on similar FY2 EV/EBITDA multiples to the distribution company Bunzl. It is broadly in line in terms of prospective EV/sales multiples with other companies focused on design, engineering and manufacturing, but is more expensive when its prospective P/E and EV/EBITDA multiples are compared. This suggests potential for an uplift in the share price once the design division is generating sustainable profits.

Exhibit 17: Financial summary

	$'000s	2018	2019	2020e	2021e
Year end 30 September		IFRS	IFRS	IFRS	IFRS
INCOME STATEMENT					
Revenue		34,500	37,409	34,103	39,481
Cost of Sales		(27,931)	(30,828)	(27,571)	(30,788)
Gross Profit		6,568	6,581	6,531	8,693
EBITDA		1,034	(161)	(251)	1,271
Normalised operating profit		806	(472)	(519)	1,002
Amortisation of acquired intangibles		0	0	0	0
Exceptionals		(256)	(2,409)	(1,462)	0
Share-based payments		(290)	(216)	(142)	(142)
Reported operating profit		260	(3,097)	(2,123)	860
Net Interest		(115)	(201)	(132)	(105)
Exceptionals		487	(310)	338	0
Profit Before Tax (norm)		690	(673)	(651)	897
Profit Before Tax (reported)		632	(3,608)	(1,918)	754
Reported tax		747	4	0	0
Profit After Tax (norm)		552	(673)	(651)	717
Profit After Tax (reported)		1,379	(3,604)	(1,918)	754
Minority interests		0	0	0	0
Net income (normalised for share-based payments and tax)		552	(673)	(651)	717
Net income (reported)		1,379	(3,604)	(1,918)	754
Basic average number of shares outstanding (m)		9.3	9.5	9.6	9.9
EPS - basic normalised ($)		0.06	(0.07)	(0.07)	0.07
EPS - diluted normalised ($)		0.06	(0.07)	(0.07)	0.07
EPS - basic reported ($)		0.15	(0.38)	(0.20)	0.08
Dividend ($)		0.00	0.00	0.00	0.00
Revenue growth (%)		N/A	8%	-9%	16%
Gross Margin (%)		19.0	17.6	19.2	22.0
EBITDA Margin (%)		3.0	N/A	N/A	3.2
Normalised Operating Margin		2.3	N/A	N/A	2.5
BALANCE SHEET					
Fixed Assets		4,016	4,256	3,416	3,220
Intangible Assets		3,594	3,431	2,624	2,462
Tangible Assets		359	243	209	176
Investments & other		64	582	582	582
Current Assets		15,212	11,838	9,518	11,021
Stocks		1,569	1,609	1,467	1,698
Debtors		9,025	6,695	7,273	7,844
Cash & cash equivalents		4,370	3,093	337	1,037
Other		248	442	442	442
Current Liabilities		(7,624)	(8,296)	(6,348)	(6,758)
Creditors		(4,527)	(3,552)	(3,238)	(3,749)
Tax and social security		0	0	0	0
Short term borrowings		(2,177)	(2,995)	(1,695)	(1,695)
Other		(920)	(1,749)	(1,415)	(1,315)
Long Term Liabilities		(504)	(87)	(87)	(87)
Long term borrowings		(118)	(26)	(26)	(26)
Other long term liabilities		(386)	(61)	(61)	(61)
Net Assets		11,100	7,711	6,499	7,395
Minority interests		0	0	0	0
Shareholders' equity		11,100	7,711	6,499	7,395
CASH FLOW					
Op Cash Flow before WC and tax		1,034	(161)	(251)	1,271
Working capital		165	(944)	(350)	(291)
Exceptional & other		(243)	(865)	0	0
Tax		0	0	0	0
Net operating cash flow		956	(1,970)	(601)	979
Capex		(56)	(33)	(73)	(73)
Acquisitions/disposals		(1,330)	0	(1,067)	(100)
Net interest		0	0	(132)	(105)
Equity financing		0	0	417	0
Dividends		0	0	0	0
Other		0	0	0	0
Net Cash Flow		(429)	(2,003)	(1,456)	701
Opening net debt/(cash)		(4,623)	(2,075)	(72)	1,384
FX		0	0	0	0
Other non-cash movements		(2,120)	0	0	0
Closing net debt/(cash)		(2,075)	(72)	1,384	683

Source: Forward Industries' accounts, Edison Investment Research

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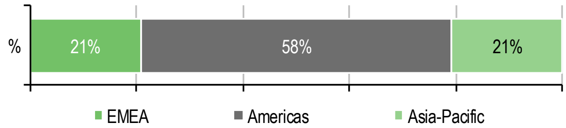
Revenue by geography (FY19)



Management team

Chairman and CEO: Terence Wise

Terence Wise has extensive experience in Asian manufacturing and distribution to developed markets. He founded Justwise in 1977 (an international sourcing company that supplies furniture and lighting products to UK retail chains) and remains principal and chairman of the company. He is also a principal of Forward APAC, a buying and supplier agent in the Asia-Pacific region; Forward APAC is the main supplier of Forward Industries. He also has significant shareholdings in two furniture manufacturing plants in China.

CFO: Anthony Camarda

Anthony Camarda was appointed in June 2020. He previously served as executive accounting support at Drive DeVilbiss Healthcare, where he provided accounting and business strategy services. From October 2013 until August 2019 he held various leadership positions at The Nature's Bounty Co, including vice president of financial planning and analysis. Prior to that, he occupied various leadership roles in finance and accounting at Motorola Solutions (formerly Symbol Technologies).

Principal shareholders	(%)
Terence Wise (CEO of Forward Industries and chairman of Forward APAC)	16.3%
Jenny Yu (director of Forward APAC)	11.3%
Renaissance Technologies LLC	7.4%
BlackRock Institutional Trust Company	4.6%

EDISON

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