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IA & IP Valuation Report

Haandle Ltd

IPV/HAA/001

September 2017

Confidential

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EXECUTIVE SUMMARY

In this report, we provide an independent review and valuation of Intangible Assets and Intellectual Property, principally in the form of patents, patent applications, proprietary know-how, software (copyright), trade marks, domain names and associated websites, and other brand assets held by Haandle Ltd ("Haandle") for the purpose of valuating the company's intangible assets in an asset financing arrangement with the director's Pension Scheme and advising the Trustees of the director's Pension Scheme and Haandle Ltd in this matter ("Purpose").

We regard a future income approach to the valuation, using a Relief-from-Royalty method, informed by market benchmarks, as being appropriate to these circumstances and the Purpose here.

On the basis of our analysis and our experience, taking into account the limitations of information available to us, the level of risks identified and the assumptions explicitly made and stated in this report, we arrive at a conservative valuation of the intangible assets, as follows: the value of the patents, patent applications and proprietary know-how assets is in the range of **£228k-£292k**, centred on **£260k**; the value of the software assets is in the range of **£171k-£219k**, centred on **£195k**; the value of the trade mark assets is in the range of **£114k-£146k**, centred on **£130k**; and the value of the domain name and website assets is in the range of **£57k-£73k**, centred on **£65k**; resulting in a final central value, for all the intangible assets held by Haandle Ltd, in the range of approximately **£626k-£803k**, centred on **£715k** (all figures are rounded to the nearest thousand), as further detailed in this report.

INTRODUCTION

Coller IP has been commissioned by Haandle Ltd to provide an independent valuation of the Intangible Assets (IA) and Intellectual Property (IP) held and owned by Haandle Ltd (Company number 09247593), principally in the form of patents, patent applications, proprietary know-how, software (copyright), trade marks, domain names and associated websites, and other brand assets, for the purpose of valuating the company's intangible assets in an asset financing arrangement with the director's Pension Scheme and advising the Trustees of the director's Pension Scheme and Haandle Ltd in this matter ("Purpose").

Scope of work

As per our proposal dated 14th August 2017, the scope of this work is to provide a valuation report of the IA and IP owned or held by Haandle Ltd. In completing the valuation, we undertook to:

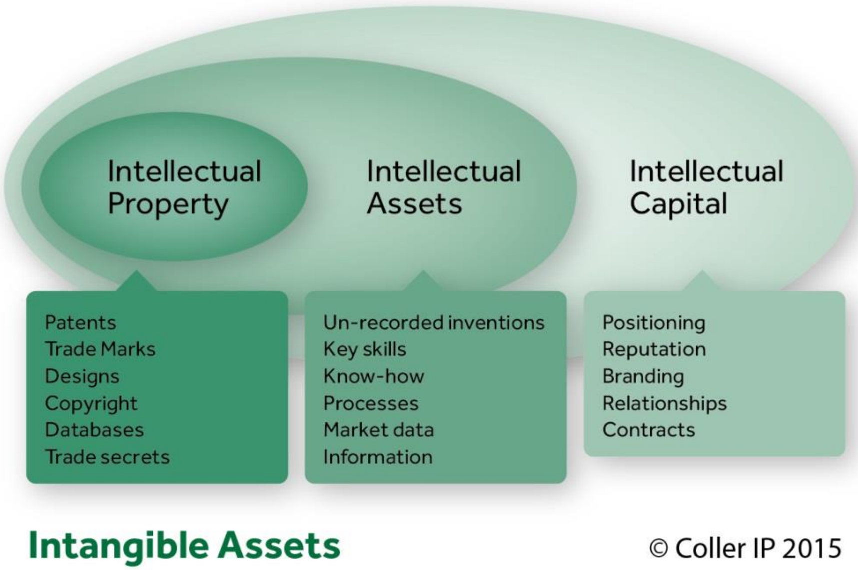
- understand the full range of intangible assets (including, in particular, patents (granted, live), pending patent applications, proprietary know-how, any formally registered trade marks, software assets and associated brand assets) within the business that contribute to value; and
- produce a summary report clearly articulating the value, the evidence, the methodology, the risks and the assumptions used.

This report is supplied in full satisfaction of the agreed deliverables.

COLLER IP

Coller IP takes a holistic and structured approach to the commercial importance of intangible assets, looking beyond the formal IP to wider elements of intangible assets that are valuable in business.

We find it helpful to consider intangible assets as providing support for business success via an appropriate combination of **legal underpinning** to commercial business opportunities, **people-based assets** for effective business operations and availability of appropriate **routes to market**. For a business to be sustainable, our experience is that all three elements of intangible assets, as shown in the diagram below, are important.



In carrying out this type of work, we seek to identify specific Intangible Assets that drive significant value and/or are effective in managing risk within the business under review and seek to understand how these are appropriately managed.

Coller IP has many years' experience of intangible asset audits, competitor IP analysis, due diligence and valuation work for a range of purposes, ranging from board-level strategy, investor positioning and licence negotiation, to corporate structuring. We bring a proprietary combination of technical, legal and commercial (TLC) skills to this type of work.

COMPANY OVERVIEW

Haandle Limited ("Haandle"), company no. 09247593, was founded and incorporated in October 2014 by Paul Hague, an experienced technology professional with over 25 years in the industry, working with Cap Gemini, IBM, O2 and various startups. Paul created the company to provide services that would help people, and in particular children, to be safeguarded from obsessive usage of the internet, anonymous chat sites and online bullying and inappropriate content, affecting family life and leading to a disconnected family. Haandle Ltd has developed the product called haandle, which is a white box device that plugs into the home router to restrict any device's access to the internet with time based rules. The product is primarily aimed at parents who want to manage their children's access to the internet. The haandle allows one to manage internet access on any device on the network, including phones, tablets, laptops PCs and games consoles. The haandle is also capable of blocking access to mobile data and external Wi-Fi networks, as well as home Wi-Fi.

The haandle product is complete, validated, packaged, and ready for manufacture and shipping. The haandle product has received CE marking certification and is compliant with the European Commission's Radio Equipment Directive (RED), (2014/53/EU), which establishes a regulatory framework for placing radio equipment on the market; the Waste Electrical and Electronic Equipment Directive (WEEE Directive) (2012/19/EU), regarding set collection and recycling; and the RoHS Directive (2002/95/EC), regarding the use of non-dangerous chemicals. The company also stated that the haandle is gaining significant attention recently, and that its product has also reached the final stage of the GCHQ Accelerator Programme.

Haandle has it main patent (GB 2533101 B; WO2016092251A1 – Distributing a network access policy) for the product granted in the UK, and the business has filed the patent application in other territories it is interested in selling its products, including the US, Canada, Europe and Australia.

Haandle Ltd has an agreement with the electronic distributor Kondor that will lead the distribution and sale of the haandle product initially via Maplin and Amazon. Haandle Ltd has also developed an Andriod App, that may be downloaded with Google play, and the business is working towards offering the App also via iTunes, and a mobile phone or device, and that connects with the haandle product. The business has stated the Google is also currently evaluating the product for its capabilities and prospects in the market.

Haandle Ltd is pre-revenue, and the company expects that sales will begin now in September/October 2017. Haandle Ltd has forecasted the following revenue and profit before tax (PBT) financial figures for FY2018-FY2019, presented in the table below.

FY:			2014	2015	2016	2017	2018	2019
	Revenues		£0	£0	£0	£0	£625	£4,700
	PBT		£0	£0	-£141	-£40	£23	£1,020

OVERVIEW OF THE KEY INTANGIBLE ASSETS

The following elements of Intangible Assets (IA) and Intellectual Property (IP) are of material value to Haandle Ltd: (i) patents, patent applications and proprietary know-how assets, (ii) software assets, (iii) trade mark assets, and (iv) domain name and associated website assets.

Patents, Patent Applications & Proprietary Know-how

Haandle has the following patents assets, as presented in the table below:

	Country / Jurisdiction	Descriptive Title	Status	Application / Publication No.	Registration No.	Filing Date	Expiry Date	Used in Products	Lifetime Remaining
1	United Kingdom	Distributing a network access policy	In Force	GB 2533101 A	GB 2533101 B	09 Dec 2014	09 Dec 2034	Yes	17 years
2	PCT Application	Distributing a network access policy	n/a	WO2016092251A1		09 Dec 2015	09 Dec 2035	Yes	n/a
3	Australia	Distributing a network access policy	Pending	AU2015359182 (A1)		09 Dec 2015	09 Dec 2035	Yes	18 years
4	Canada	Distributing a network access policy	Pending	CA2970425 (A1)		09 Dec 2015	09 Dec 2035	Yes	18 years
5	Europe	Distributing a network access policy	Pending	150823 726.3		09 Dec 2015	09 Dec 2035	Yes	18 years
6	USA	Distributing a network access policy	Pending	not available		09 Dec 2015	09 Dec 2035	Yes	18 years

We have assumed an average patent lifetime of approximately 18 years, until 2035, for the present valuation on the IP held by Haandle Ltd.

Haandle has also stated that its products and services are supported by significant proprietary know-how that has been developed by the business along with its patent assets and supports the business.

Trade Marks

Haandle has the following trade mark asset 'Haandle', in stylised/logo form, as below. We have valued this trade mark asset on the assumption that the mark is registered at least in the UK.

We regard unregistered marks as being significantly lower in value than registered marks, as they are more difficult and costlier to defend against infringement.

Software

We understand from Haandle Ltd that the following three main software packages were developed in-house, or using contractors working under terms of agreement that explicitly transfer ownership of the developed software to Haandle Ltd. The software package projects developed by the business include primarily the following projects:

- (1) Linux bespoke kernel on the router;
- (2) Management software on the router for setting up and managing Wi-Fi network and setting parental control policies; and
- (3) App on smartphone for receiving the policies and implementing them on the phone.

Haandle has stated it has developed the Linux bespoke kernel software package on the router with drivers for the murata Wi-Fi chip that is utilised in the its products. As part of this software package, Haandle has also developed a bespoke over-the-air update platform that allows the company to update all software on the router in the field. Haandle has indicated that this platform is end-to-end encrypted and that it is accessed and pulled down by the router as and when there is a required update.

The management software that Haandle has developed on the router for setting up and managing Wi-Fi network and setting parental control policies, is capable of manipulating the internet protocol (IP) tables in the Linux operating system (OS) to block or allow internet traffic alongside services to manage the times for blocking. The company has stated that the user interface (UI) developed configures the internet protocol (IP) tables and sets up the system services and cron jobs, not only to only manage timers, but to also provide functionality for live device notification, so that for instance, a device attaches to the network, it is automatically listed without having to refresh the page. This management software package also has features such as 'pause internet' or 'allow extra time' for specific devices. Haandle has indicated that a key part to this, is the way the policy to passed around to smartphones. The restriction, when created, can be passed to the app on the smartphone in a very small binary bitstream when on the home network, while if it is out of the network, the policy can be passed from the router to an SMS gateway that the software system is then capable of sending this policy in a silent binary Short Message Service (SMS) to the phone or mobile device. This way, Haandle states that the person or child using the phone or mobile device, is less likely to be out of reach.

The app on the phone that Haandle has developed acts as an interpreter to the binary policy that has been sent. Haandle stated that this policy is decrypted and unpacked and then a binary interpreter in the app deciphers the policy and implements this on Wi-Fi networks and 3G/4G networks. The business mentioned it does this by one of two methods. The first method involves turning off mobile data and not allowing it to be switched back on until the restriction is finished or by creating an internal virtual private network (VPN) that has no endpoint. In this manner, the VPN facility does not connect outside and drain battery. Haandle has also developed anti-tamper features. Haandle stated that as the app runs its own internal clock, in the event that the person or child changes the time on the phone, this system has been designed so that this will have no effect on the policy. Parents can set a pass code so the app cannot be stopped. If the app is deleted, the software package sends a notification to the parent or responsible person.

Domain Names and Associated Websites

Haandle has the following domain name and associated website:

- www.haandle.com; and
- www.haandle.co.uk; (that redirects to the main domain name and website www.haandle.com).

The above domain names and associated websites serves primarily as shop windows, in supporting the business. In supporting future sales, these domains and websites clearly indicate that the products will be available soon in selected retail outlets, instore and online, including via Maplin and Amazon.

In some cases, domain names have particular value due to their intrinsic connection with a well-known brand or service, which may lead to high website traffic. In this case, the domain name has a direct connection with the Haandle brand name and we consider the principal market value of the domains to be the 'www.haandle.com' as the domain name in supporting the website activity of the business.

VALUATION OF THE KEY INTANGIBLE ASSETS

In this section, we provide our valuation opinion on the IA and IP assets ("Assets") owned by Haandle Ltd. identified above. This section will detail:

- the information relied upon;
- the assumptions made;
- caveats for understanding this report;
- the basis and approach suitable for the Assets; and
- the calculations and figures from our valuation.

Evidence and Information Provided

The information provided by Haandle Ltd to Coller IP, and which forms the basis for this valuation is listed below:

- Information about Haandle Ltd. in documents supplied by Haandle Ltd, including:
    - Financial Accounts for Haandle Ltd (Company no. 09247593) for the Years ended 31 May 2015 – 2016, and the Years ended 28 Feb 2017;
    - Management Accounts and Financial Projections for the current FY2018 for Haandle Ltd;
    - Investor Presentation, business plan and overview, business opportunity, P&L, and Financial Forecast for Haandle Ltd ('2016 12 Investor Presentation v5.pptx' file, dated 28 March 2017);
    - Updated financial information on the business' financial projections (revenue and profit before tax) and expected sales operations in the UK, EU and the US (dated 15th Aug 2017 and 16th Aug 2017);
    - Additional explanation and information provided during meeting call with Haandle Ltd on 09th August and 29th August 2017; and
    - Schedule of IP.

In addition, we have used information from the following external sources:

- RoyaltySource® database; benchmarking royalty rates;
- Companies House: for further information on the company;
- ESPACENET and WIPO databases; and national/regional patent office databases for information on the company's patents and patent applications; and
- UKIPO, EUIPO and other national patent offices: for information on the company's trade marks.

Basis, Assumptions and Caveats

Our understanding of the assets being valued is based on the information provided by the Client, described under the 'Evidence and Information Provided' section of this report.

In arriving at an assessment of value, we aim to determine a Fair Market Value, that is, a value that would be arrived at as a fair price between a seller and a buyer acting freely in a market. We have taken account only of the information made available to us by the Client, information available from public sources (as appropriate), and publicly available comparator information (as appropriate) on IP-related royalty rates. Where specific information material to value is not available, our valuation is dependent on explicit assumptions, which are stated in this report.

Our opinion is provided solely for the benefit of the Client for the Purpose stated above; we give no warranty for use of this opinion for any other purpose or by any other party.

Our valuation opinion is valid as of the time of our report and is based on the information available to us at that time. Material changes in circumstances subsequent to that time may change the validity of that opinion at a future date. We note that in reaching our opinion we will make no detailed assessment of the validity or current legal status of the patents, other than where explicitly stated in our report.

Our valuation is given as an opinion in good faith based on our interpretation of the evidence available, our experience and our informed view of relevant risks. Other IP valuers may reach a different opinion from the same evidence. We note also the dependence of our valuation on the business projections provided by the Client; the reliability of these in practice will be determined by future events and the economic environment at the time and may be subject to unforeseen change, which may in turn impact on the reliability of the valuation made at this time.

Basis for Valuation

In approaching the valuation of IP, three approaches are generally accepted as relevant: a **historic cost** approach which considers the investment made in developing the relevant IP; a **market value** approach, which seeks to identify free-market transactions that may be considered as comparators; and a **future income** approach, which seeks to estimate the present value of future economic returns that are attributable to the IP.

Historic Costs approach

Here we make an estimate of the costs of development of the IP to date. In some cases, it can be useful in setting a benchmark cost and providing some protection from competitors who would have to invest a similar amount of resources to replicate the product or service offering. We note that the cost of developing assets is not generally a good indicator of their future value, so we do not regard this approach as being appropriate in this case. Although in some cases it can be useful in setting a benchmark cost and providing some protection from competitors who would have to invest a similar amount of resource to replicate the product or service offering.

Market value approach

A market-value based approach relies on the ability to identify transactions similar in character and for similar types of asset. Such an approach is familiar in real estate and art markets. The combination of very much broader (and relatively unique) nature of intangible assets and the current absence of significant liquid markets for such assets strongly limits the ability to use this approach.

Future Income Model

We consider a ‘Future Income’ approach to be the most appropriate under these circumstances. This approach is based on making an estimate of the current value of future cash that can be attributed to the Intangible Assets, taking proper account of risk. We regard this approach as being the most appropriate here and later sections describe how we have applied this approach in this case.

Future Income Model

The Future Income approach is based on making a quantitative estimate of the current value of future cash that can be attributed to the Intangible Assets, taking proper account of risk and the cost of capital.

In this case, we have assessed the value of the assets, appropriately discounted for risk, using a ‘relief from royalty’ future income model, which is appropriate under these circumstances. This is based on an estimate of the Net Present Value (NPV) of future cash flows attributable to applying a notional royalty rate to the sales of the products and services. This is equivalent to the royalty that the company would otherwise have to pay to a third party if it did not own the IP and had to pay royalty fees under a licence agreement, hence the name for this approach.

For this purpose, we need to establish a revenue stream and apply an appropriate notional royalty rate to the revenues to provide a basis for valuation. We have also conducted searches of publicly available benchmarking data for royalty rates representative this type of asset.

Revenue Stream

We have based the future revenue and profit projections for the intangible assets provided by Haandle. Past figures are based on actual performance. Haandle stated that it expects to begin sales in September/October 2017. Haandle Ltd also stated that it is developing agreements to sell its products in the UK via Maplin and Amazon. We have taken as the basis of future income, loss before tax (LBT), profit before tax (PBT) and projections of Haandle Ltd for FY2018-FY2019. We have assumed a further conservative tapering down of the year-on-year growth in both revenues and PBT for the period FY2020-FY2023, and of 0% compound annual growth rate (CAGR) for the period FY2023-FY2028, as shown in the table below:

						28-Feb											
£k	31-May		Growth:	0%	0%	0%	62400%	652%	15%	10%	5%	0%	0%	0%	0%	0%	0%
FY:			**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
	Revenues		£0	£0	£0	£0	£625	£4,700	£5,400	£5,950	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250
	PBT		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356

DCF discount rates

In a Discounted Cash Flow (DCF) calculation of NPV, a key input is the discount rate applied to represent the cost of capital. This starts from an assessment of risk-free capital (normally based on government bonds/gilts) and then has additions to account for risk (reflecting the higher costs of borrowing or financing according to risk). For a large listed stable business with well-established trading performance, this would typically be about 10-12% depending on market sector and volatility factors. As risk is perceived to increase, higher rates apply.

At the extremes, the risks in a start-up company with no established trading are very high, and the DCF rate can be considered to be equivalent to the expectations of a typical early stage investor, looking for an over 10x return on investment within a 4-year period, to offset the expectation that a few (perhaps as low as 1 in 10) such early stage investments will succeed. If reflecting this risk solely in DCF rate terms, this rate of return requirement would be equivalent to a DCF rate of as high as 80%, but this places little value on growth in the medium to long term. In practice, a combination of discounting projected performance explicitly at the top line and implicitly with a lower DCF rate is often appropriate, especially for early stage companies that have established a level of performance.

We have considered the appropriate level of risk discounting to be applied to the future cash flows. We regard the future projections of the Haandle business to be medium-high risk, given the company's recent track record, current start-up phase, uncertain conditions and future challenges of the business, and operating in a competitive technology market. We have therefore allocated a DCF discount rate in a range of 30%-35%, centred on 32.5% as appropriate to these business projections, and recognising the potential risks and rewards associated with the business moving forward.

Royalty Rate

In establishing an appropriate notional royalty rate, we seek to ensure that the rate is within the general industry accepted benchmarks and, in particular, that it would, in an equivalent licensing situation, allow an appropriate balance of reward for both the licensor and licensee.

We have reviewed benchmarks derived from publicly available information for licensing of brand assets, software assets and patent assets in the wireless technology and communication industry.

Comparable royalty rates for transactions involving internet/wireless communication technologies, and based on the consumer goods, retail & leisure sector, where the majority of the products and services are in, have been found to be between 0.1% and 28%, with an average of 5.5% and a median value of 5.0%; as well as based on the electrical & electronics sector, where royalty rates have been found to be between 0.5% and 15%, with an average of 4.2% and a median value of 4.0%, in licensing transactions (please see Appendix 1 for further details). Upon a detailed analysis of the trends, and in view of the significant software element of the business and the presented financial data of the business and agreements being developed with Kondor, Maplin and Amazon; and as we have reflected on the business' current and projected revenue and profitability figures associated with its current start-up phase; we have assumed a slightly higher royalty rate for the Purpose here in the range of 5.0%-6.0%, centred on 5.5%, applied to the future revenues. In such circumstances, we also rely upon our experience in the industry and consideration of the profitability of the company to set notional royalty rates for assets such as this.

In this case, within the total royalty rate of 5.5%, we have allocated 2.5% for the patent, patent applications and associated proprietary know-how assets; 1.0% the trade mark assets, where the brand embodies the reputation of the products and services provided by Haandle, where the company has had public attention for the past 3 years that the company has been in business. In addition, we have allowed a royalty rate of 1.5% for the software assets; and 0.5% for the domain names and associated websites assets, (in particular, 'www.haandle.com') that further supports the business, bringing the total assumed royalty rate for these assets to 5.5%.

Terminal Value

Our discounted cash flow calculation takes into account ten years of projections; however, some of the IP may still be relevant after ten years; in particular, trade marks which have an indefinite life if strongly used and renewed (every ten years). As such we have included a terminal value to represent the value of the IP beyond the projection period. For this purpose, we have used a perpetuity growth model which assumes a constant growth rate beyond the projection period and calculates the terminal value by using the final year of revenues divided by the DCF rate minus the constant growth rate. We have used this approach, rather than an exit multiple mode, because it is a more conservative approach and is appropriate to the purposes and circumstances here. Note that we have assumed a negative growth rate of 5%, for the intangible assets, beyond 2028.

Relief from Royalty Calculation

This section presents our calculations of value for the intangible assets in Haandle, using the projections by Haandle, and the relief-from-royalties methodology, and key parameters as detailed above.

Valuation – Patents, Patent Applications & Associated Proprietary Know-how

This section presents our calculations of value for the patent, patent applications and associated proprietary know-how assets using the relief from royalty methodology and the key parameters detailed above.

The table below contains the net present value (NPV) calculation for patent, patent applications and associated proprietary know-how assets of the business allowing for a 20% corporation tax liability (applied to previous years' profits to reflect the timing of tax payments) and at central values of the royalty rate (2.5%) for these assets and DCF rate (32.5%). Note that the calculation for 2018 includes a future contribution of only six months remaining (50%) for the period September 2017-February 2018.

							50%										
						28-Feb											
£k	31-May		Growth:	0%	0%	0%	62400%	652%	15%	10%	5%	0%	0%	0%	0%	0%	0%
FY:			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	Revenues		£0	£0	£0	£0	£625	£4,700	£5,400	£5,950	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250
	PBT		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Dividends (in lieu of salary)		£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
	PBT after Dividends		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Profit Margin						3.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
			Relief from Royalty														
			Rate	2.50%													
			Notional Royalties				£7,813	£117,500	£135,000	£148,750	£156,250	£156,250	£156,250	£156,250	£156,250	£156,250	£156,250
				Less Corp tax	20%		£0	-£1,563	-£23,500	-£27,000	-£29,750	-£31,250	-£31,250	-£31,250	-£31,250	-£31,250	-£31,250
				Total			£7,813	£115,938	£111,500	£121,750	£126,500	£125,000	£125,000	£125,000	£125,000	£125,000	£125,000
				Roy/Profit			34%	11%	10%	9%	9%	9%	9%	9%	9%	9%	9%
				Roy/AdjPBT			34%	11%	10%	9%	9%	9%	9%	9%	9%	9%	9%
				Future Years			0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.50	9.50	10.50
				Discount Factor	32.5%	100%	87%	66%	49%	37%	28%	21%	16%	12%	9%	7%	5%
				Discounted Value			£6,787	£76,015	£55,174	£45,469	£35,655	£26,590	£20,068	£15,146	£11,431	£8,627	£6,511
																NPV	£307,473
													Terminal growth:	-5%		TV	£17,362
																Total:	£324,835

From this calculation, we obtain a NPV to 2028 of £307k. To this, we add a terminal value, to account for the in-perpetuity value of the patents, patent applications and associated proprietary know-how assets beyond the end of the projection period, calculated using a conventional (and conservative) formula with a conservative long-term negative growth rate (-5%), of £17k, giving a total of £325k (figures are rounded to the nearest one thousand pounds).

Sensitivity Analysis: Allowing for variations in the royalty rate (2.4%-2.6%) and the DCF rate (30%-35%) we calculate a value for the Haandle patents, patent applications and associated proprietary know-how assets in the range of £294k-£355k, centred on £325k (all figures are rounded to the nearest thousand).

Valuation –Software

This section presents our calculations of value for the software assets using the relief from royalty methodology and the key parameters detailed above.

Similarly, to the intangible asset valuation calculations above, and using the same revenue/turnover projections, the table below contains the net present value (NPV) calculation for the software assets, allowing for a 20% corporation tax liability (applied to previous years' profits to reflect the timing of tax payments) and using central values for the royalty rate (1.5%) and a central DCF rate of 32.5%, established above. Here, we assume that software assets will need to be updated significantly after a period of five years, to continue supporting the business, and therefore future revenue projections from these intangible assets are calculated until 2022, as seen in the table below. Note that the calculation for 2018 includes a future contribution of only six months remaining (50%) for the period September 2017-February 2018.

						50%										
					28-Feb											
£k	31-May	Growth:	0%	0%	0%	62400%	652%	15%	10%	5%	0%	0%	0%	0%	0%	0%
FY:		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
	Revenues	£0	£0	£0	£0	£625	£4,700	£5,400	£5,950	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250
	PBT	£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Dividends (in lieu of salary)	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
	PBT after Dividends	£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Profit Margin					3.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
		Relief from Royalty														
		Rate	1.50%													
		Notional Royalties				£4,688	£70,500	£81,000	£89,250	£93,750						
		Less Corp tax		20%		£0	-£938	-£14,100	-£16,200	-£17,850	-£18,750	£0	£0	£0	£0	£0
		Total				£4,688	£69,563	£66,900	£73,050	£75,900	-£18,750	£0	£0	£0	£0	£0
		Roy/Profit				20%	7%	6%	6%	6%	-1%	0%	0%	0%	0%	0%
		Roy/AdjPBT				20%	7%	6%	6%	6%	-1%	0%	0%	0%	0%	0%
		Future Years				0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.50	9.50	10.50
		Discount Factor		32.5%	100%	87%	66%	49%	37%	28%	21%	16%	12%	9%	7%	5%
		Discounted Value				£4,072	£45,609	£33,104	£27,281	£21,393	-£3,989	£0	£0	£0	£0	£0
															NPV	£127,471
															TV	£0
															Total:	**£127,471**

From this calculation, we obtain a NPV to 2028 of £127k.

Sensitivity Analysis: Allowing for variations in the royalty rate (1.4%-1.6%) and the DCF rate (30%-35%) we calculate a value for the Haandle domain software assets in the range of £117k-£138k, centred on £127k (all figures are rounded to the nearest thousand).

Valuation – Trade Marks

This section presents our calculations of value for the trade mark assets using the relief from royalty methodology and the key parameters detailed above.

The table below contains the net present value (NPV) calculation for trade mark assets of the business allowing for a 20% corporation tax liability (applied to previous years' profits to reflect the timing of tax payments) and at central values of the royalty rate (1.0%) for the trade mark assets and DCF rate (32.5%). Note that the calculation for 2018 includes a future contribution of only six months remaining (50%) for the period September 2017-February 2018.

							50%										
						28-Feb											
£k	31-May		Growth:	0%	0%	0%	62400%	652%	15%	10%	5%	0%	0%	0%	0%	0%	0%
FY:			**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
	Revenues		£0	£0	£0	£0	£625	£4,700	£5,400	£5,950	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250
	PBT		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Dividends (in lieu of salary)		£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
	PBT after Dividends		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Profit Margin						3.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
			Relief from Royalty														
			Rate	1.00%													
			Notional Royalties				£3,125	£47,000	£54,000	£59,500	£62,500	£62,500	£62,500	£62,500	£62,500	£62,500	£62,500
				Less Corp tax	20%		£0	-£625	-£9,400	-£10,800	-£11,900	-£12,500	-£12,500	-£12,500	-£12,500	-£12,500	-£12,500
				Total			£3,125	£46,375	£44,600	£48,700	£50,600	£50,000	£50,000	£50,000	£50,000	£50,000	£50,000
				Roy/Profit			14%	5%	4%	4%	4%	4%	4%	4%	4%	4%	4%
				Roy/AdjPBT			14%	5%	4%	4%	4%	4%	4%	4%	4%	4%	4%
				Future Years			0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.50	9.50	10.50
				Discount Factor	32.5%	100%	87%	66%	49%	37%	28%	21%	16%	12%	9%	7%	5%
				Discounted Value			£2,715	£30,406	£22,070	£18,188	£14,262	£10,636	£8,027	£6,058	£4,572	£3,451	£2,604
																NPV	£122,989
													Terminal growth:	-5%		TV	£6,945
																Total:	**£129,934**

From this calculation, we obtain a NPV to 2028 of £123k. To this, we add a terminal value, to account for the in-perpetuity value of the trade mark assets beyond the end of the projection period, calculated using a conventional (and conservative) formula with a conservative long-term negative growth rate (-5%), of £7k, giving a total of £130k (figures are rounded to the nearest one thousand pounds).

Sensitivity Analysis: Allowing for variations in the royalty rate (0.9%-1.1%) and the DCF rate (30%-35%) we calculate a value for the Haandle trade marks assets in the range of £113k-£147k, centred on £130k (all figures are rounded to the nearest thousand).

Valuation – Domain Names and Associated Websites

This section presents our calculations of value for the domain name and associated website assets using the relief from royalty methodology and the key parameters detailed above.

Similarly, to the trade mark calculation above, and using the same revenue/turnover projections, the table below contains the net present value (NPV) calculation for the website and domain name assets, allowing for a 20% corporation tax liability (applied to previous years' profits to reflect the timing of tax payments) and using central values for the royalty rate (0.5%) and a central DCF rate of 32.5%, established above. Here, we assume that the website will need to be updated significantly over a period of five years to continue supporting the business, and therefore future revenue projections from these intangible assets are calculated until 2022, as seen in the table below. Note that the calculation for 2018 includes a future contribution of only six months remaining (50%) for the period September 2017-February 2018.

							50%										
						28-Feb											
£k	31-May		Growth:	0%	0%	0%	62400%	652%	15%	10%	5%	0%	0%	0%	0%	0%	0%
FY:			**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
	Revenues		£0	£0	£0	£0	£625	£4,700	£5,400	£5,950	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250	£6,250
	PBT		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Dividends (in lieu of salary)		£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
	PBT after Dividends		£0	£0	-£141	-£40	£23	£1,020	£1,172	£1,291	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356	£1,356
	Profit Margin						3.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
			Relief from Royalty														
			Rate	0.50%													
			Notional Royalties				£1,563	£23,500	£27,000	£29,750	£31,250						
				Less Corp tax	20%		£0	-£313	-£4,700	-£5,400	-£5,950	-£6,250	£0	£0	£0	£0	£0
				Total			£1,563	£23,188	£22,300	£24,350	£25,300	-£6,250	£0	£0	£0	£0	£0
				Roy/Profit			7%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
				Roy/AdjPBT			7%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
				Future Years			0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.50	9.50	10.50
				Discount Factor	32.5%	100%	87%	66%	49%	37%	28%	21%	16%	12%	9%	7%	5%
				Discounted Value			£1,357	£15,203	£11,035	£9,094	£7,131	-£1,330	£0	£0	£0	£0	£0
																NPV	£42,490
																TV	£0
																Total:	**£42,490**

From this calculation, we obtain a NPV to 2028 of £42k.

Sensitivity Analysis: Allowing for variations in the royalty rate (0.45%-0.55%) and the DCF rate (30%-35%) we calculate a value for the Haandle domain name and associated website assets in the range of £38k-£47k, centred on £42k (all figures are rounded to the nearest thousand).

The following table summarised the split in value between the intangible assets above:

Patents, Patent Applications & associated proprietary know-how assets	**£228k-£292k**, centred on **£260k**
Software assets	**£171k-£219k**, centred on **£195k**
Trade mark assets	**£114k-£146k**, centred on £**130k**
Domain name and associated website assets	**£57k-£73k**, centred on **£65k**

CONCLUSIONS AND OPINION

The information above presents an independent assessment by Coller IP of the value of the identified Intellectual Property in the form patents, patent applications, proprietary know-how, trade marks, software, and domain names and associated websites assets, held or developed by Haandle Ltd, for the purpose of valuating the company's intangible assets in an asset financing arrangement with the director's Pension Scheme and advising the Trustees of the director's Pension Scheme and Haandle Ltd in this matter.

We regard a future income methodology for the valuation of the intangible assets, using a Relief-from-Royalty approach, as being appropriate to these circumstances and the Purpose here.

On the basis of our analysis and our experience, taking into account the limitations of information available to us, the level of risks identified and the assumptions explicitly made and stated in this report, we arrive at a conservative valuation of the intangible assets, as follows: the value of the patents, patent applications and proprietary know-how assets is in the range of **£228k-£292k**, centred on **£260k**; the value of the software assets is in the range of **£171k-£219k**, centred on **£195k**; the value of the trade mark assets is in the range of **£114k-£146k**, centred on **£130k**; and the value of the domain name and website assets is in the range of **£57k-£73k**, centred on **£65k**.

Therefore, we arrive at an overall valuation for all the intangible assets held by Haandle Ltd, in the range of approximately **£626k-£803k**, centred on **£715k** (all figures are rounded to the nearest thousand), as further detailed in this report.

APPENDIX 1: ROYALTY RATE DETERMINATION

This Appendix shows the approach used to establish an appropriate royalty rate for the valuation of the Haandle Limited IA/IP assets.

Key issues for assessing comparators

A licence deal normally relates to a fair sharing of the extra profits generated as a result of access to the IPR associated with the IP being licensed. This may be realised through a single up-front or staged payment structure, and/or may be covered by a royalty rate associated with a share of the profit margin on sales, expressed as a percentage of sales, and applied over a number of years. Due to the risks associated with brand development, market responsiveness and commercial success, up-front payments are usually agreed with a discount on full value to reflect risks and therefore represent a conservative view of full value.

Many licence deals include a negotiated combination of up-front and long-term royalty payments, depending on the agreement reached on how risk will be shared between the parties. As the profit share is covered by the total of these, it is normal to expect that the lower the up-front component, the higher the potential royalty percentage on sales, and vice-versa.

The following issues may be considered in an assessment of reasonable royalty rates:

- The scope, territory and field of the licence – application, geography, sector and sub-sectors
- The structure of the consideration in a licensing deal – up-front payments vs downstream royalties
- Exclusivity – exclusive=higher rate; non-exclusive=lower rate
- Term of the licence
- Conditionality to reflect risk
- Unit for calculation of royalties – system/sub-system/component level - and the extent to which the licensed IP contributes to market value of the units being sold
- Delivery of supporting services within the deal structure

In assessing royalty rates in licensing deals, we take account of the factors listed above (to the extent that they apply and relevant information is available) and other variants in reviewing benchmarks.

Table A1: Summarised analysis of transactions in a range of industry sectors (derived from RoyaltySource®)

Industry	Average	Median	Max	Min	Count
Chemicals	4.7%	4.3%	25.0%	0.1%	78
Internet (incl software)	11.8%	8.8%	50.0%	0.3%	88
Telecom (excl Media)	4.9%	4.5%	15.5%	0.4%	73
Consumer Goods, Retail & Leisure	5.5%	5.0%	28.0%	0.1%	98
Media & Entertainment	9.1%	5.0%	50.0%	2.0%	25
Food Processing	3.2%	2.8%	10.0%	0.3%	38
Medical/Health Products	6.1%	5.0%	77.0%	0.1%	376
Pharma & Biotech	7.0%	5.0%	50.0%	0.0%	458
Energy & Environment	5.0%	5.0%	20.0%	1.0%	107
Machines/Tools	5.2%	4.5%	25.0%	0.5%	90
Automotive	4.3%	3.5%	15.0%	0.5%	59
Electrical & Electronics	4.2%	4.0%	15.0%	0.5%	139
Semiconductors	4.3%	3.0%	30.0%	0.0%	75
Computers & Office Equip	5.3%	4.0%	25.0%	0.2%	73
Software	11.5%	6.8%	70.0%	0.0%	147
Industry Summary	*6.40%*	*4.80%*			*1,924*

This shows evidence that intangible asset agreements related to the Consumer Good, Retail & Leisure sector have been licensed at royalty rates of between 0.1% and 28%, with an average of 5.5% and a median value of 5.0%; and related to the Electrical & Electronics sector have been licensed at royalty rates of between 0.5% and 15%, with an average of 4.2% and a median value of 4.0%. Upon a detailed analysis of the trends, and in view of the significant software element of the business and the presented financial data of the business and agreements being developed with Maplin and Amazon; and as we have reflected on the business' current and projected revenue and profitability figures associated with its current start-up phase; we have assumed a slightly higher royalty rate for the Purpose here in the range of **5.0%-6.0%**, centred on **5.5%**, applied to the future revenues.