

A Work Project, presented as part of the requirements for the Award of a Master Degree in Finance from the  
NOVA – School of Business and Economics.

## Equity Research on Bang & Olufsen

Turning turbulence into opportunity:  
Are BeoConditions gathered?

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## Abstract

### Keywords (up to four)

-Turnaround

-Audio

-Niche

-Circumstances

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This report is part of the Equity Research on Bang & Olufsen report (annexed) and should be read as an integral part of it.

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Source: Bang & Olufsen



Figure 1 Bang and Olufsen's Logo

Source: Bang & Olufsen

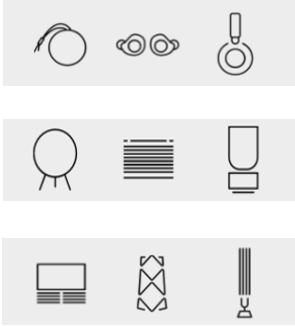


Figure 2 Product Categories

## COMPANY OVERVIEW

Bang & Olufsen (B&O) was founded in 1925 by Peter Bang and Svend Olufsen and is a luxury Danish audio brand. It is placed in the Technology sector, precisely in the CE<sup>1</sup> industry.

## BUSINESS MODEL

The company operates in 3 main categories, aiming for a premium feeling in all:

**On-the-Go:** Headphones and earphones designed for urban and active life, mobility-based, mainly associated with more impulsive purchases that translate a fast-selling process with fixed standard prices.

**Flexible Living:** Mainly portable speakers, home products that fill any room with audio while creating a comfortable environment, these are more expensive, and their prices might diverge according to finishes and accessories.

**Staged:** Premium Speakers, Televisions, products that grant an immersive sound and cinematic experience, these are not standard, being customized. Associated with longer processes due to made-to-order production.

Besides, B&O has Partnerships with several automotive companies and consumer electronics affiliates<sup>2</sup>. The company has also evolved to digital with its website, its B&O app that allows to control products and personalize the audio and an Augmented Reality experience app.

B&O focuses on becoming a customer love brand, aiming for the best user experience, and committing with the longevity of its products. As for customer targeting, four distinct segments are the focus: Generation Z, Careerist, Well-established and High-Net worth. The business's focus is mainly the HNWI and, to target these customers the company wants to extend its presence in their lives. "If they (e.g., F1 paddock teams) have the money to be there they also have the money to buy B&O" (Egenhardt, 2021), said the company's Head of Investor Relations. Similarly, it works closely with interior designers, as HNWI frequently recur to those types of services.

## INDUSTRY OVERVIEW

### TRENDS AND FUTURE GROWTH

Higher demand for home entertainment arose with the pandemic, being one of the few segments that was resilient through the situation. It also influenced the way consumers shop and incentivized digital devices and online retail sales. Consumer preferences changed, and tech advancements are at an accelerating rate.

Regarding **speakers**, smart gadgets are a rising trend, motivated by growth in high-definition streaming. Here, functions such as Bluetooth and portability are prioritized. According to Statista, ¼ of US and UK internet users own smart speakers. Beosound A1 2<sup>nd</sup> Gen represents B&O's success in following trends.

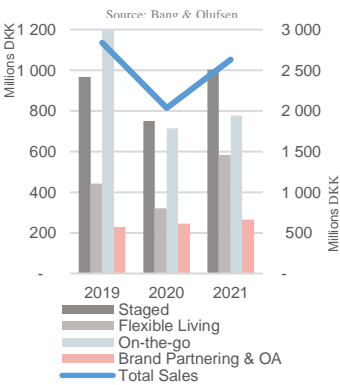


Figure 3 Past Revenues per Product



Figure 4 Target Customers

Source: PCMag, TechRadar, WhatHifi, Wired

Feature	B&O Beosound A1	Check
Price	Medium - High	X
Portability	Mini	✓
Smart	Speakerphone, Alexa-enabled, stereo-pairing mode	✓
Bluetooth	Bluetooth 5.1	✓
Design	Stunning	✓
Sound	Expansive	✓
Battery Life	18 hours	✓
Rank	PCMag	★★★★
	TechRadar	★★★★
	WhatHifi	★★★★
	Wired	★★★★

Figure 5 Beosound A1 2nd Gen Performance

<sup>1</sup> CE – Consumer Electronics

<sup>2</sup> Affiliates such as Hewlett-Packard (HP), the computer hardware company.

"Luxury is the journey, not the goal"  
(Danziger, 2020)

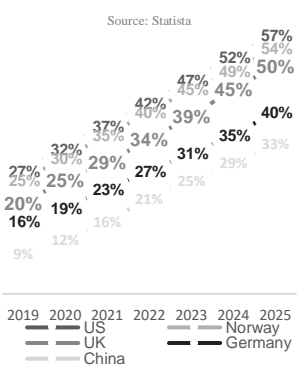


Figure 6 Smart Home Penetration



Figure 9 BeoLink Technology

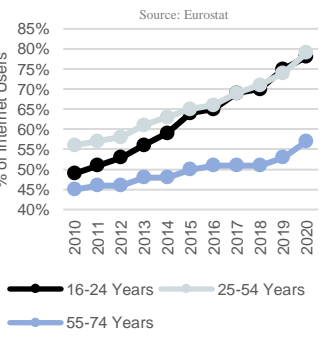


Figure 8 EU Users who bought or ordered goods or services for private use in previous 12 months

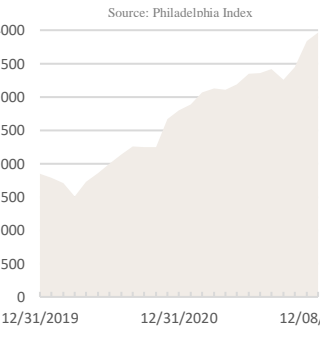


Figure 7 Semiconductor Index

Website	Quote
HomeCinema Magazine	"guaranteed to make a splash in every interior"
HomeCinema Magazine	"one of the most powerful wireless speakers on the market"
Scandification	"a speaker that blurs the line between audio entertainment, and art"

Figure 10 Beoplay A9 Reviews

**Headphones and earphones** are a growing market that benefits from the adoption of smartphones. The tendency is to opt for wireless, comfortable and with active noise cancellation devices.

As per **TVs**, demand is dependent on technology innovations and necessity to replace or upgrade owned models. When choosing, factors such as convenience, screen type and size, resolution are considered. B&O works in a premium setting, specifically inside this denominated blue ocean category.

Given all the indications that the future lies in smart devices, we have observed a major technological shift towards smart and connected homes. Being B&O's business rooted in the underlying devices (TV and Speakers), it is set to benefit in upcoming years as luxury and quality are significant characteristics when investing in home technological products. B&O will benefit due to its commitment to longevity, worker's tendency to combine personal and work devices and app connectivity. According to Statista, the US is set to reach 57% in smart homes penetration in 2025. Other countries like France, UK, Norway, Germany, and China resembled as core markets for B&O, are set to follow the same trend. Furthermore, it has entered the Smart Home sector with its BeoLink technology, enabling communication across products and the B&O app.

The growing number of smartphone and internet users reshaped how the market operates regarding both sales and retail channels. Motivated but not established by the pandemic, the trend for consumers to adopt online shopping is deeply felt in consumer electronics. Despite smartphones being its main engine, other market segments offered by B&O are expected to be incorporated in such approach.

**CHALLENGES AND RISKS**

As companies do, industries also have risks, either supply (e.g., political, or intellectual property) or demand related (e.g., consumer preferences change). The pandemic brought those risks up and showed nothing must be taken for sure. Given this, worldwide recessions are risks of any industry, including this one.

In the technology industry, especially in the consumer electronics sector, price volatility can happen due to component scarcity. The supply shortage resulted from the pandemic due to increased demand and factory closures. This brought severe logistics issues as the delivery of goods was delayed and capacity costs increased. According to Forbes, this shortage has been affecting industries from automotive to electronics. B&O deeply suffered due to semiconductors shortage as did others such as Sony and General Motors. Currently, there are different opinions regarding the length of this disruption. Major chipmakers, such as Intel, believe that this problem will extend until the end of 2023. To approach it, technology-based businesses have opted to substantially increase their chip inventories, implement longer supply contracts and increase production capacity. For instance, B&O has increased its production capacity on its best-selling product the A9 speaker, launched in 2012. Such action was particularly well received by investors.

## INDUSTRY AND ITS PEERS ANALYSIS

According to Statista, companies in Technological industries hold significant amounts of Cash & Cash Equivalents, [20%-30%] of total assets. If, however, one takes high market cap examples depicted in S&P Global market intelligence, this ratio is lower but still substantial. Three reasons are stated, paying debt peacefully, handling emergency situations or tech shocks and to grow through acquisitions. If one takes B&O's example, its ratio seems in line with the tech industry particularly in recent years mainly due to COVID implications. Nevertheless, since 2015 (year it sold automotive department) this metric has been above the industry average but below its fellow peer, SONOS. We do believe this discrepancy with the market embedded the inherent volatility resulting from a market niche position

Source: Company Reports & Bang & Olufsen

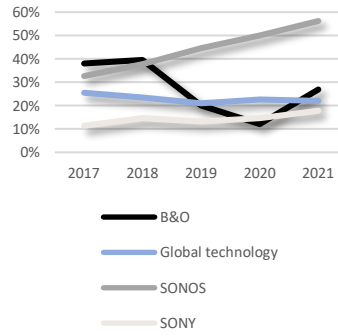


Figure 11 Cash Levels

According to Forbes, Apple stands out for its negative CCC<sup>3</sup>, which illustrates a tremendously capable and effective supply chain. Other successful consumer electronics companies such as Panasonic or Sony follow the same trend. According to GMT past data, the sector's CCC is around 78 days. It is key to acknowledge B&O's potential to perform similarly to this high rank competition. However, it becomes equally important to bear in mind we are talking about a turnaround case in which the strategy still needs to accomplish several milestones.

Nevertheless, one should compare B&O's metric with more relative peers. After analyzing such industry players' CCC over the last years, it is possible to observe quite different results within the CE sector. Considering B&O and its most related peers SONOS, Universal Electronics, Plantronics, and TCL Electronics, the average CCC over the last 4 years stays between [43-47] days. B&O has had volatile CCC, however, in 2018, before COVID it seemed to be heading the right direction

Source: Company Reports

	2017	2018	2019	2020
B&O	39	16	57	86
SONOS	17	22	14	- 19
Uni.Elec.	107	102	93	109
Plantronics	69	85	91	73
TCL Elec.	- 16	- 1	- 23	- 23
Average	43	45	47	45

Table 1 Cash Conversion Cycle - Consumer Electronics

## B&O'S POSITION

The CE market is divided into four segments: TV, Radio & Multimedia, TV Peripherals, Telephony and Computing. Regarding B&O, the focus is on the first offering three product categories: headphones, audio speakers and TVs. Nevertheless, if one wants to pinpoint its exact position, the niche place it occupies in the CE market should be considered.

## COMPETITION

Bang & Olufsen positions itself in a CE luxury market niche. We can consider both low-cost peers and high-end peers. Despite knowing that the latter category is preferable, most of these companies (Harman, Beats, Bowers & Wilkins) are private and, in most cases, supported by big. Additionally, it would be inappropriate to evaluate B&O current turnaround context with public tech giants such as Sony as neither the scale of operation nor the financial structure would enable a trustworthy analogy. Consequently, SONOS, the American audio electronics company, is the most accurate peer despite heritage discrepancies.

Source: Bowers & Wilkins, Harman, Beats, B&O, Sonos,



Figure 12 Industry Landscape Breakdown - Public (bottom) and Private (top)

<sup>3</sup> CCC - Cash Conversion Cycle

Source: Bang & Olufsen



Figure 13 Bang and Olufsen's products throughout time

Source: Wired, PCMag, PM, TechRadar, WhatHiFi, digitaltrends

Website	Overall rank	Quote
Wired	#12 out of 17	"one of the best-sounding small speakers we've ever heard"
Pcmag	#4 out of 12	"Powerful, rich, well-defined audio"
PM	#7 out of 10	"Compact, durable design with great audio"
TechRadar	#11 out of 13	"consistently crisp sound"
Whathi-Fi	#6 out of 18	"Expansive sound, weighty bass"
digitaltrends	#8 out of 8	"you'll be hard-pressed to find another portable speaker this size that provides the kind of elegant sound-staging"

Figure 14 Opinions about Beosound A1 audio quality

Source: Bang & Olufsen



Figure 15 AR App

Source: Bang & Olufsen

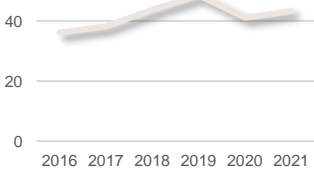


Figure 16 Gross Margin (%) throughout time

Source: Bang & Olufsen



Figure 17 EBIT before Special Items (%) throughout time

## B&O's COMPETITIVE ADVANTAGES

The following competitive advantages argument for the implied growth rate in 2035

**HERITAGE.** 96 years of history portray Bang & Olufsen's resilience. From roof-mounted loudspeakers for circuses and army vehicles to specialized audio electronics, B&O was able to endure through history. While some past turbulence could be pointed at the Danes, their resilience and experience resemble a trustworthy system to investors and end customers.

**DIFFERENTIATION.** High quality of materials (smoked oak wood, stainless steel, aluminum) together with a specialized craftsmanship known for its aluminum anodization yields a minimalistic but aesthetically Nordic design. Recently, Beosound Balance won the prestigious iF Design 2021 Awards<sup>4</sup>. On top of that, 68 more projects won in previous years.

**AFFINITY.** B&O doesn't rely on mass production but rather on a tailored approach centered on customer's experience. In fact, owning a B&O product needs to be prestigious as it offers the capacity to provide impressive audio quality vastly appeals to the niche market of luxury for wealthier costumers. The company then drives loyalty through its personalized customer experience, by offering high-end products that meet the beliefs and finally through personalized aesthetics that appeal to HNWI. For instance, its Bespoke solutions, allows for customizability of products.

**FUTURISTIC.** Besides, the company is extremely innovative, namely because of its out of the ordinary design when you think about an audio gadget. B&O was one of the first to produce a radio that ran on alternating currents rather than batteries. Since then, the company keeps challenging the typical way of doing things, betting on products such as a minimalistic speaker that looks like a book. Another example of B&O's technological driven mindset relies on its Augmented Reality experience app. It allows customers to visualize products in their living space or on themselves. This is a dominant trend in the CE market according to Statista.

## BANG & OLUFSEN CURRENT CONTEXT

### WHY NOW?

Bang & Olufsen's previous CEO, Henrik Clausen, left the company in 2019, 3 years after being hired, due to bad performance: sales decline and excess inventory. Even though the brand has been turbulent for the past 15 years, several changes in their management team and strategy failures, it is believed that now is the time. Such faith relies on 6 improvements made last year or to be made over 2022.

Primarily, the company has been able to consistently deliver on their targets with its turnaround strategy, proposed by its most recent team, being able to improve profitability in 2021 even with the impact of covid. Foundation was perfected through new board members (CEO Kristian Teär and CFO Nikolaj Wendelboe). Stephen Zadesky, former Apple Senior Executive that participated

<sup>4</sup> iF Awards - International Forum Design Awards

in the development of the first iPod and iPhone, joined B&O as external advisor in the beginning of November 2021. He aims to “support the company’s future product portfolio” with his vast experience in products scalability (Stephen Zadesky joins Bang & Olufsen as External Advisor, 2021).

Although B&O primarily works with distributors, it never had access to data. Recently, it has established a way to track their sell-out data, thus being able to better understand consumers preferences. With an improved vision on what their demand consists of, it was able to efficiently allocate production costs. Additionally, this inevitably ends up allowing for more customer-oriented product availability.

The Danish company has also focused on the development of their software, hiring engineers to mitigate their problems with products that are more suitable for the future. This last quarter, new employees were hired, particularly in software and engineering areas to build the right teams, capabilities, and structures.

Concerning their social media approach, B&O has been developing its presence in the area through valuable marketing efforts with fast results, mainly through influencers. For instance, Trent Alexander-Arnold, Liverpool FC player, and Fernando Alonso, Formula 1 driver, express the company’s determination.

Source: Bang & Olufsen



Figure 18 Beosound Level

About ESG<sup>5</sup>, there is a growing concern, even though it is generally difficult topic to consolidate with the Consumer Electronics sector. An introduction of a circular product design to support its longevity commitment and implementation of a low-carbon economy are some of the goals the company has been working towards. In September of 2021, Beosound Level was awarded as the first ever Cradle to Cradle Certified® speaker in the CE industry. This certification is only given to products that enable a sustainable tomorrow, which translates the company’s desire to have lifelong, environmentally friendly, products. This year, B&O was nominated for “Best Company” in the Sustainable Development Goals Tech awards and finished in the top 5.

According to an ABG Sundal Collier Investment Bank Analyst and to B&O’s the Head of Investor Relations, the company is planning on releasing a Loyalty Program that would reward current customers and retain them, increasing brand affinity. B&O wants to create an ecosystem for their customers where those would be able to register in the app and benefit from special services. This program would help sell-out data performance and, consequently, improve product functioning through potential economies of scale. Nevertheless, as a long-standing company, still is quite complicated to access data as to which products older customers own.

Source: Bang & Olufsen

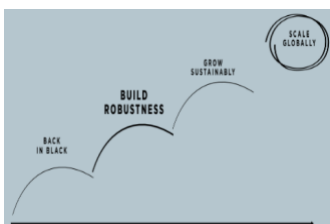


Figure 19 Stages of Turnaround Strategy

## STRATEGY

The pandemic forced tremendous business implications and it is safe to say B&O’s new approach allowed operations sustainability, while building the basis for a smooth recovery. Since April 2020, focus has been on its new strategy, built on 4 stages.

<sup>5</sup> ESG – Environmental, Social, Governance

Regarding Back in Black, B&O tried to mitigate COVID implications mainly through a cost reduction programme implemented in March 2020 aiming to optimize Staff and SG&A costs. The company was devoted to update its eCommerce. Besides, it wanted to build a solid product portfolio through solving connectivity issues and launching innovative products. Marketing activities were headed for digital marketing and software development. Contemporaneously, B&O started to implement essentials of the upcoming phase: growing its presence its six core European markets while building brand awareness and operational bases on two core Asian markets.

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In May 2021, B&O's strategy started the Built Robustness stage. This phase is believed to end in 2030 as the company will not rush its operations nor engage in risky capital structures but rather use its brand affinity and organizational efficiency to follow an organic growth strategy.

B&O firstly thrives to prove a scalable growth formula through both an oriented marketing and suitable product portfolio. Secondly, it prospers to build upon operational growth by increasing its presence in European markets, creating the same in Asia and expanding strategic partnerships. B&O already extracts the bulk of its revenues from EMEA thanks to its solid brand recognition together with an effective operational and logistical landscape. While at this juncture it believes to be well positioned to keep delivering absolute positive future growth from monobrand stores, the exact opposite happens in the American market. The Latin region lacks sufficient HNWI to justify an investment and, going north, it has found a large but fragmented market with both well-established players (e.g., Beats, Bose, Marshall, JBL) and customers who generally would be willing to spend extra money on national products. Therefore, the strategy in East mostly relies on retail partnerships worthy of a robust customer recognition such as BestBuy, Horizon, Amazon, and Cisco. The collaboration with Cisco is recent and strategically important as it is a large multinational conglomerate likely to bring brand awareness to B&O.

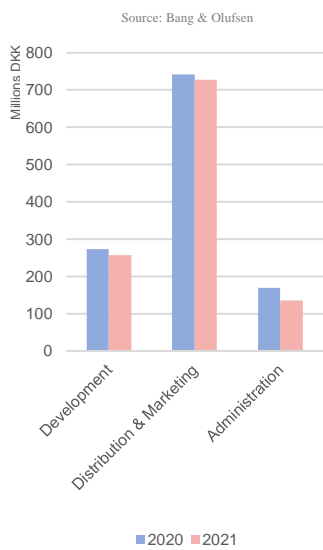


Figure 20 Cost Reduction Programme

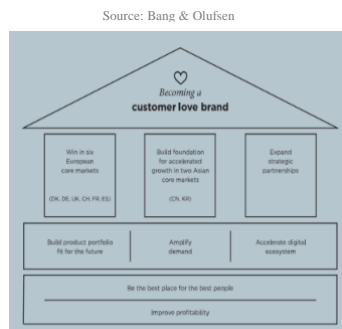


Figure 21 Build Robustness Stage

It was assumed that by 2030 the company will enter the Growth Sustainability. While most drivers are likely to stabilize until 2035, others should remain as high as in previous expansionary years to keep driving the business forward. Finally, the Scale Globally phase was not forecasted due to the distant timeframe. Given B&O's link to technology, it is believed that in 18 years the world has already experienced tech shocks which completely change the industry's paradigm.

### STRATEGIC SUITABILITY

It is essential to analyze if the strategy foundations are set accordingly. To verify if such is true, data on both Monobrand stores and High Net Worth Individuals Worldwide extracted from B&O's official website and Statista was used.

By observing Figure 17, one can identify B&O's strategic focal point on its core markets: France, UK, Spain, Switzerland, Denmark, Germany, South Korea, and China. On top of that, it is as important to notice the low quantity of monobrand stores in America when compared to other regions for reasons already mentioned.

By considering Figure 17 and 18, it is evident that the two data captions correlate quite well, as B&O's Monobrand stores are usually located in countries where HNWI are positioned. Secondly, comparing the top 15 ranked countries in the mentioned captions, one concludes the Danes have 10 focus points exactly in 10 out of the 15 places where wealthy entities are. As the only setback in this observation, Denmark represents the second country with more Monobrand stores but falls short in the rank of places with the greatest number of HNWI, n° 18.

A special focus must be given to China, where B&O's strategy is expecting to extract most future revenues. Here, the company already operates on 32 monobrand stores, representing not only the fourth country in that caption rank but also the second country with more HNWI. The Asian market has evolved a lot during the last years, Asiatic HNWI have been substantially increasing at a superior pace than America or EMEA. With a CAGR of 108% which relates to its GDP growth, it all points out for it be a reliable source of revenue.

It was concluded that this strategy is suitable and should lead to positive results, reasons why it was assumed that the company will want to successfully follow it.

### REVENUE, COST STRUCTURE AND MARGINS

In 2020/21 the company presented revenue of DKK 2.6Bn, EBIT before Special Items of DKK 38M (1.4% margin) and FCF of DKK 119M. Currently, most of the revenues come from EMEA (49%), region that also delivered the most profit, and from their staged category (38%). As for the channel, digital ones grew significantly but monobrand remains the largest and most-revenue generating.

Even though the pandemic affected all industries, the company's turnaround strategy, its cash policy, and the rights issue, allowed it to go beyond expectations and achieve growth comparing to last year's results. In 2021 B&O reached profitability with a FCF of DKK 119 M, while creating foundation for future growth.

Source: Bang & Olufsen

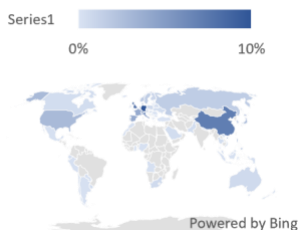


Figure 22 B&O's Monobrand Stores

Source: Statista

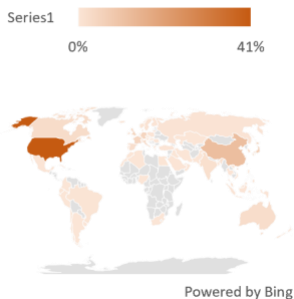


Figure 23 HNWI Density Worldwide

Source: Statista

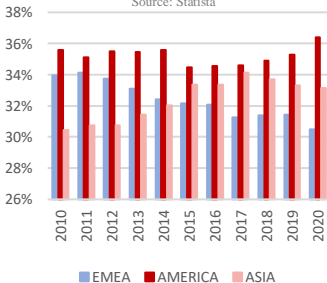


Figure 24 HNWI Weight World

Source: Bang & Olufsen



Figure 25 Revenue Breakdown

Source: Bang & Olufsen

(in millions DKK)	Outlook 21	Actual 21	Change
Revenue	2 200	2 629	429
EBIT bef. Special Items	-100	38	138
FCF	-200	119	319

Figure 26 Exceeding Expectations after COVID

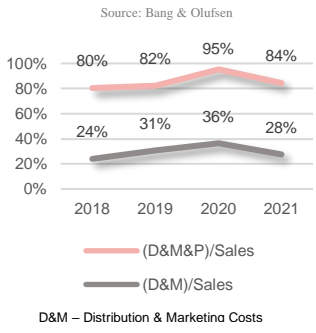


Figure 27 Costs Evolution as a % of Sales

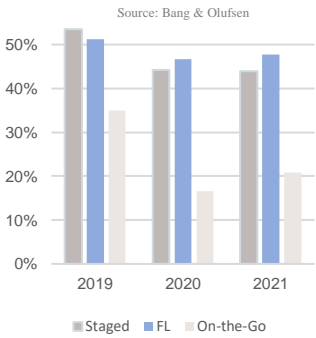


Figure 28 Past Gross Margin

As for costs, due to scarcity of electronic components, production and logistics costs went up specially in 2020 resulting in a negative EBIT of DKK -126M. Although revenues decreased significantly, capacity costs increased as percentage of sales. The company uses microchips for “many of its products” as stated by the Wall Street Journal. This shortage affected prices, which went up “by an average of 2%”, but also gross margins. B&O has already implemented longer term contracts with suppliers and looked for alternative methods of transportation (e.g airfreight). The outlook of such shortage does not look good, being expected to affect the Danes until, at least, 2023. Consequently, B&O has implemented the mentioned cost reduction plan, which has achieved an annual run-rate of DKK 202M in relation 2022. However, this was partially offset by employee bonus provisions of DKK 11M to compensate for salary reduction during COVID’s outbreak.

About margins, it is clear the company has high margin in Brand Partnering & Other Activities. This segment requires low levels of maintenance since B&O will have a complementary role to partner’s production.

About product sales, the category with highest margin has been Flexible Living for the past 2 years. Not only has this been the company’s most comfortable margin but also one expected to keep performing at similar standards. Additionally, it was the least affected by COVID, with margins between [47%-51%] in the last 3 years.

In the Staged Category, B&O believes there is still room for improvement. It suffered a huge reduction of margin from 54% in 2019 to 44% in 2021, even though this last value is already an improvement from the pandemic’s impact. According to the Head of Investor Relations, this category is a “blue ocean” with no peer offering similar high-end services with such customization levels. It is expected to massive invest attempting to create more awareness of Staged products.

The lowest performing category, On-the-Go, has the tiniest and more volatile margins. It is the one more influenced by the competitive landscape and the one that suffered the most in 2020. In the future, the company aims to adapt its strategy here, to compete while balancing this capability with its higher prices.

### FISCAL POLICY

In 2021 the company reported an effective tax rate of 29% resulting in a tax shield of DKK 10M, given the reported negative earnings. Companies based in Denmark are subject to a statutory tax of 22% since 2014, a lower rate than past years to sparkle business activity. Such is likely to remain constant, which makes our case when assuming a 22% statutory tax that, with adjustments, equals the effective tax for the year. Amongst the adjustments, the ones related to deferred tax assets, changing tax rates in foreign subsidiaries and Non-deductible costs, non-taxable income are counted as core and the ones projected as an average of past years.

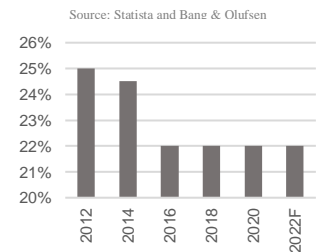


Figure 29 Denmark Statutory Tax Rates Evolution

Source: Bang & Olufsen

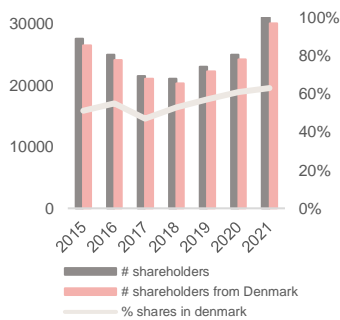


Figure 30 Major Shareholders and their origin

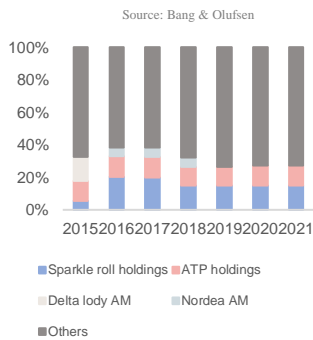


Figure 31 Major Shareholders composition

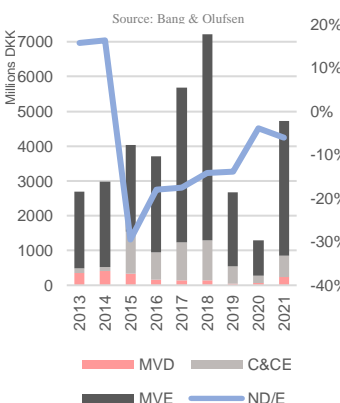


Figure 32 Evolution of Capital Structure

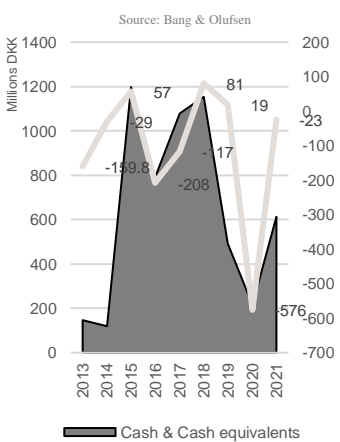


Figure 33 Cash & Cash Eqv. and EPS Evolution

## SHAREHOLDER'S STRUCTURE

Geographically, 61% of capital belongs to Danish based Shareholders, representing around 95% of shareholders. The other 5%, characterised by international investors, own 49% of the company demonstrating a valuable partnering source for growth.

Despite an affinity base of 31000 shareholders, the top five hold nearly 43%, were ATP<sup>6</sup> and Qi Jiang should be highlighted. The Danish Pension fund, which engages through its active ownership policy, has full trust on the business model: "Our trust in the B&O brand is intact," Wiinblad. Qi Jiang is a billionaire owner of Sparkle Rolls, distributor of luxury products within various market segments. There has been speculation about a tender offer. It might be related to potential synergies coming from a potential retail engine to boost B&O's Asiatic ambition.

## CAPITAL STRUCTURE

B&O's capital structure is mainly composed by equity, reaching its highest market value of DKK 5 923M in 2019. In May 2021 the share price was DKK 32, with a volume of 120.659.715 resulting in a Market Capitalization of DKK 3878M. Although its lagged return on equity of -4% represents a red flag, one should consider its recover from -41% in 2020.

There are two equity events worth of looking at. The share buyback programme of 2019, used to showcase the company's sustainable and profitable position. Although cancelled in 2020 due to the undesirable free cash flow, it initially aimed at buying DKK 485M in shares. The other being the 2021 rights issue, 81 848 058 announced shares were subscribed in 98.9% with net proceeds amounting DKK 359M. Although it caused both an increase in share price and shareholder dilution, it was used to go through COVID-19.

Regarding debt, the company has sufficient liquidity of DKK 594M and a strong solvency ratio of 1 in 2021, which together make the case of B&O's healthy balance sheet. Its debt consists of Lease liabilities, Mortgage Loans, and Bank Loans. Looking at graph 9 one can conclude B&O barely engages in debt activities, which is no surprise given its cash & cash equivalents. Therefore, B&O's usage of similar amounts of debt going forward seems reasonable.

The business follows a conservative cash policy since 2015, resulting in negative Net Debt to Equity ratios. This was tremendously impacted in 2020 as the board was forced to use cash reserves to keep up with operational costs. It is believed B&O does so due to performance and uncertainty. Linked to the first, the company states upcoming strategic challenges, past earnings volatility, and cyclical insufficient results as reasons to hold cash. Additionally, it does so to address uncertainty as the industry is prone to frequent changes and Small-Medium sized investments may be needed to keep up the pace. Operating cash as a percentage of revenues in the given year was assumed equal to 5.2%, which represents the lowest ratio of Cash & Cash Equivalents to sales in the last 11 years of data. [also check figure 34 in the next page]

<sup>6</sup> ATP Holdings - Arbejdsmarkedets Tillægspension

Source: Company Reports

Cash Ratio	2019	2020	2021
B&O	0.6	0.3	0.7
SONOS	0.8	1.0	1.3
TCL EI.	0.4	0.3	0.2
Universal EI.	0.3	0.3	0.3
Plantronics	0.4	0.4	0.2

Figure 34 B&O and Peers Cash Ratio

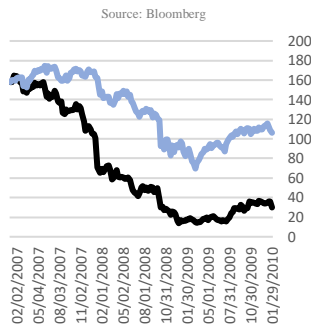


Figure 35 Stock Performance

Source: Amazon Spain

Brand	Price
Sound Core Flare 2	80 €
Sony SRS - XB23	100 €
EU BOOM 3	125 €
JBL Flip 5	130 €
Sonos Roam	199 €
Beosound A1	211 €
Bose Portable	419 €

Figure 36 Portable Speaker Prices

Source: Bentley

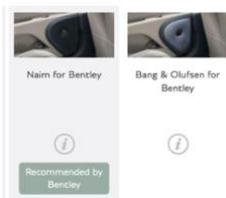


Figure 37 Bentley's Personalization Options

Source: Bang & Olufsen

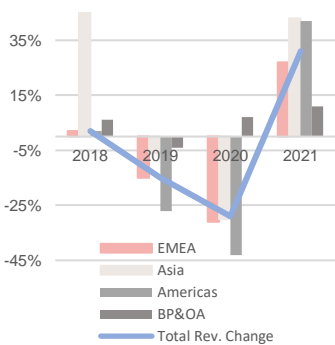


Figure 38 Growth of Revenues in Local Currency

Source: Equity Research

Multiple used	Share Price
EV/SALES	34
EV/EBITDA	21
P/SALES	26

Figure 39 Group 1 Multiples

Source: Equity Research

Multiple used	Share Price
EV/SALES	47
EV/EBITDA	28
P/SALES	53

Figure 40 SONOS Multiples

## RISKS

B&O's focus has always been on combining modern technology with high-end design to create timeless products. This has put it as an industry niche and thus, product prices are high. Consequently, it has cyclical demand, being able to sell as the economy is doing well but barely floating as the opposite happens.

Another risk comes from the fact that standard technology premise is rooted in performance. Being a luxury good does not compromise performance but rather the price at which performance is achieved implying consumers may prefer function over luxury. B&O Play was a budget-friendly sub-brand that represented most of the company's revenues. To mitigate this discrepancy, it was phased out and all products started to sell under the primary name.

The company is surrounded by low-cost competitors like Bose, JBL, Sennheiser. One could ignore this threat when taking into consideration only the high-end niche market in which B&O operates. However, this high-cost competitors such as Beats, or Harman belong to massive tech groups such as Apple and Samsung, respectively. This could be a headache for B&O as they have broader brand awareness and more flexible capital structure to keep up with the tech wave.

One should also mind that Partnerships & Other Activities, being a comfortable margin source, brings risks. For example, Bentley offers the option of using either Naim or B&O audio systems in certain car models. However, the manufacturer recommends Naim, with which it has an exclusive partnership since 2008. B&O incurs the risk of not being the preference brand, which can weaken its image.

Additionally, as Bang & Olufsen is rooted in Denmark, it is important to mention currency risks if DKK loses value in relation to other currencies from geographies where the company ditches its operations. Either way, this is something considered in the forecasted caption "Exchange rate gain (loss)".

## VALUATION

### MULTIPLES

Multiple Valuation allows to recognize how a company behaves compared to its peers. The Price-to-Earnings ratio doesn't apply as a valuation multiple in this case since B&O's ratio is unstable and often negative. EV/EBIT didn't fit as well as all peers presented values significantly different from B&O's case, especially because the Danes represent a turnaround case with earnings meaningfully impacted by depreciation and amortization.

We relied on EV/EBITDA, EV/SALES, P/SALES and B&O's 2022 forecasted data. The first two are not influenced by the company's capital structure, being less affected by accounting differences and more industry specific. EV/EBITDA seems accurate as this multiple is typically used in companies where fixed assets are less important and, thus, have low Depreciation and Amortization. EV/SALES was also studied as the company is slowly reaching profitability. P/SALES allows to account for possible mis valuations regarding the turnaround strategy.

Source: Equity Research

Multiple used	Share Price
EV/SALES	42
EV/EBITDA	39
P/SALES	46

Figure 42 Group 2 Multiples

Source: Equity Research

Multiple used	Share Price
EV/SALES	42
EV/EBITDA	23
P/SALES	46

Figure 41 Sony Margin

Source: Bang & Olufsen

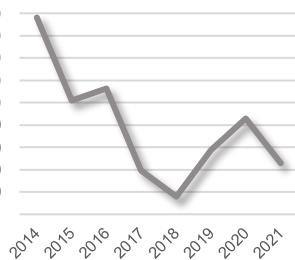


Figure 43 B&O's Share Price

Source: SONOS and Bang&Olufsen

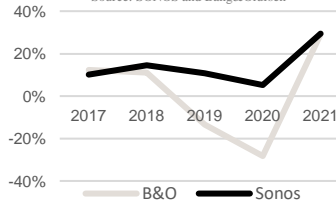


Figure 44 Revenue Evolution

Source: Equity

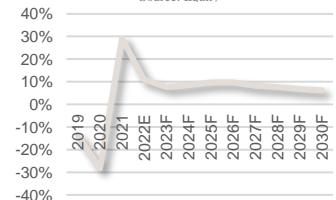


Figure 46 Revenues B&O

Source: SONOS and Bang&Olufsen

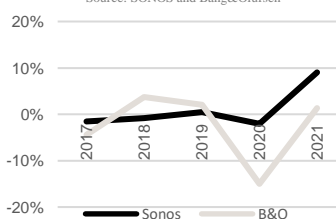


Figure 45 EBIT Margins

Source: Equity Research

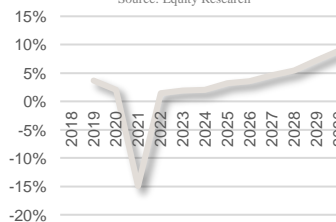


Figure 47 EBIT before Special Items

Two different groups were considered. The first one consists of SONOS, Universal Electronics and TCL Electronics. The second includes big conglomerates such as Apple and Sony.

About the first, this selection resembles peers that are part of the CE industry, selling similar products, whose betas are generally above 1 and that have strong cash positions like B&O. As not all companies are equal, some outliers were not considered depending on the multiple being evaluated. Here, SONOS was distinguished as the most relevant peer, deserving an exclusive multiple analysis. For the second group, mature companies were analysed given that, in case B&O successfully completes its strategy, it will probably achieve similar ratios. Like SONOS before, Sony was given extra importance.

### B&O VS SONOS

Prior to B&O's valuation, it is useful to compare it with its main peer, SONOS. Remarkably, both analysts and B&O expressed investors cautionary interest to know how the Danes perform against the Americans. For the following appraisals, data of the last 5 years was used as Sonos only recently had its IPO.

Concerning B&O, even though its share price was DKK 32 by November 2021, its predicted price of DKK 34.6 in May 2022. About Sonos, it had a November share price equalling 32\$. Analyst consensus extracted from WSJ and CNN depict an increase to around 48\$ until the end of 2022.

**SALES: B&O.** Centred over a comparison of historical Data as shown in Graph 37, we can see B&O has been weaker in terms of revenue growth. Although both enterprises have shown the same significant 29% revenue growth from 2020 to 2021, one should bear in mind B&O's remarkable recovery from 2020. Together with ABG Sundal Collier, B&O is expected to increase and stabilize its revenue growth as the strategy is applied. For instance, a sales growth of [5%-9%] during the 1st stage was predicted. This is conservative as it considers B&O's exceptional demand for CE during COVID-19. Therefore, growths like 2021 are unlikely to occur as vaccines roll-out enable consumers to spend their money otherwise (e.g., travelling). Regarding Sonos, their growth is expected to be slightly lower, [3%-6%] as it will focus in a fragmented and competitive market. Like B&O, it is expected to suffer from this income effect post COVID, which shall affect sales.

**EBIT MARGIN: SONOS.** Regarding EBIT margins before special items and looking at B&O's data, volatile margins are observed. Nevertheless, there is confidence this will quickly become something of the past as new Management focuses on a more efficient operational system. In fact, part of this argument can be observed in 2021 as the margin increased from -15% to 1%. Going forward, in Build Robustness, EBIT margin will increase to a value of 8.8% in 2030. Observing Sonos, after discussing with analysts we expect it to have a slightly better EBIT margin, partially explained due to its successful cost organization already shown. Their margin is prone to reach superior values of [5%-8%], earlier than B&O.

Source: SONOS and Bang&Olufsen

	2019	2020	2021
SONOS (A.P)	42%	43%	47%
B&O (FL&OTG)	39%	26%	32%
F.L	51%	47%	48%
OTG	35%	16%	21%

Figure 48 Product Margins

**PRODUCT MARGIN: AMBIGUOUS.** As Sonos does not offer staged-like category products, means of comparison should be drawn between its audio products and B&O’s flexible living and on-the-go. On a broader level, one is tempted to think Sonos is performing better. However, considering Dane’s ambitions to increase and tighten the on-the-go margin fluctuations, the case shifts. Additionally, it is important to mention the effectiveness of the flexible living category, with margins consistently above Sonos. In fact, this category resembles a significant part of B&O’s revenue and is expected to serve as a benchmark other segment margin. Going forward, we expect both to achieve margins of around [45%-55%].

Source: SONOS and Bang&Olufsen

	2017	2018	2019	2020	2021
SONOS	17	22	14	19	9
B&O	39	16	37	86	46

Figure 49 CCC

**CCC: SONOS.** Sonos’s remarkable operational efficiency result in healthy CCCs 5-year average of 9 days. Curiously, its main driver, collection period, resembles the opposite regarding B&O’s with an average of 81 days, 14 above the sample peers average. Going forward, we do expect improvements, recognizing it takes time to close the gap. Consequently, being Sonos the best out of the sample, it will most likely perform above B&O’s projected 2030 value of 29 conversion days.

**STRATEGIC: B&O.** Although we believe in Sonos’s strategy suitability, more hope is assigned to B&O. It has shown encouraging signs of an irreversible turnaround.

Large part of Sonos’s revenue comes from Americas. We do hold a sceptical view regarding high-end luxury suitability to the American market. Despite the loyal customer base, modest relative growth is expected. Like B&O, the company has the ambition to expand its horizons to the Asiatic region. However, its low revenue percentage, either resembles lack of priority or slow regional bond.

About data availability, we believe Sonos is better positioned. As customers cannot use products without their app connectivity, benefiting from a closed-off data ecosystem. Although B&O aims to build data capacity, narrowing the gap, it faces barriers. These include the need to promote the apps and the tracking of older products as it is a company with a long past.

**DECISION.** First, it is important to acknowledge both companies’ potential. We expect them to move accordingly to the sector. Although B&O is our nominee with higher predicted sales growth and strategy direction, conclusions may change considering different investor’s profile. The argument being that Sonos’s size, better operational efficient and moderate growth pinpoint to a more risk averse investment. Here, concerns about recent data on its juridical battle against Google arise. While recognizing this might affect Sonos either way, one may think it merely symbolizes its last breath to keep competitive.

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## BANG & OLUFSEN

### CONSUMER ELECTRONICS

ANDRÉ NÚNCIO & MARGARIDA FERNANDES

## COMPANY REPORT

17 DECEMBER 2021

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### The turnaround strategy

#### Seeking brand awareness

- B&O's past has resembled significant financial turbulence and strategic failures. Nonetheless, the recently implemented turnaround strategy, although negatively impacted by the worldwide components shortage, has shown positive results. Being able to recover from COVID-19 with a 2021 EBIT margin before special items of 1.4%.

- Its qualified management team, its new data system, its marketing & development approach all mirror the company's efforts to achieve both operational efficiency and brand awareness.

- Until 2030, products sales are expected to increase by 70%, being Asia and the E-commerce channel two key drivers. Brand partnering will also rise significantly, resulting in an EBIT margin improvement of 7pp during the forecasted period.

- Special awareness should be pointed at the recent Omnicron impact. Investors' sentiment was affected, causing a share decrease of approximately 19% since November 2021.

- For the DCF valuation, growth of 2.6% and WACC of 8.8% were used. Based on our analysis, a price of DKK 34.6 was estimated for B&O's share in December 2022. This value leads us to a BUY recommendation with an expected capital gain of 34%, no dividends are forecasted to be paid until then.

#### Company description

Bang & Olufsen is a Danish high-end audio company that operates around 70 markets worldwide and is recognized for its iconic premium design.

**Recommendation:** BUY

**Price Target FY22 (Dec.):** DKK 34.6

**Price (as of 16-Dez-21)** DKK 25.9

Reuters: BO CO, Bloomberg: BO DC

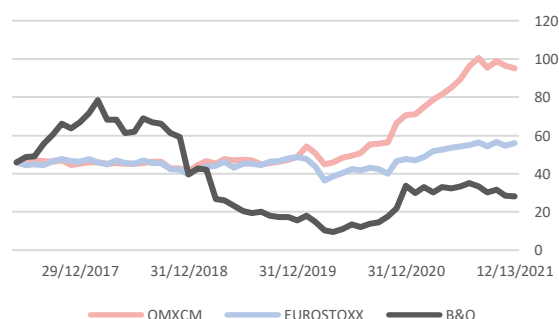
52-week range (DKK) 25.68 - 41.98

Market Cap (DKK) 3,163B

Outstanding Shares (m) 120.66M

Source: Bloomberg (rebased to B&O's share price)

#### B&O vs OMXCM vs EUROSTOXX



Source: Bang & Olufsen

(Values in millions DKK)	2021	2022E	2023F
Revenues	2 629	2 911	3 126
Rev. Growth Asia (Product Sales)	40%	10%	6%
Rev. Growth Americas (Product Sales)	35%	5%	4%
Rev. Growth EMEA (Product Sales)	27%	5%	4%
Gross Margin	43%	43%	46%
EBIT Margin Bef. Special Items	1.4%	1.6%	2.7%
Total Comprehensive Income	-32	31	63
Invested Capital	882	1 055	1 104

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY ANDRÉ SEQUEIRA LINCE NÚNCIO AND MARGARIDA SANTOS MARTINS FERNANDES, MASTER IN FINANCE STUDENTS OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL.

(PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

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Source: Bang & Olufsen



Figure 1 Bang and Olufsen's Logo

Source: Bang & Olufsen

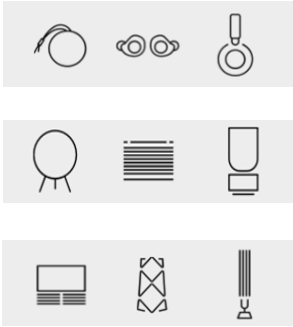


Figure 2 Product Categories

Source: Bang & Olufsen

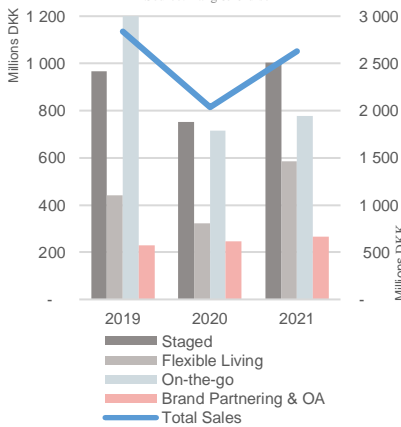


Figure 3 Past Revenues per Product Category

Source: Bang & Olufsen

SEGMENT	GENERATION Z	CAREERIST	WELL-ESTABLISHED	ULTRA HIGH NET WORTH INDIVIDUAL
FOCUS MARKETS	China & South Korea	Western Europe China	Western Europe	Selected global destinations
PRODUCT FOCUS	Headphones & earphones Portable speakers	Flexible living speakers Headphones & earphones	Sound for screen solutions Staged speakers	Best of Staged as centerpieces for full audio and screen solution across home
CHANNELS	Lead with online	Lead with multibrand stores	Lead with monobrand stores	Lead with architects and interior designers

Figure 4 Target Customers

## COMPANY OVERVIEW

Bang & Olufsen (B&O) was founded in 1925 by Peter Bang and Svend Olufsen and is a luxury Danish audio brand. It is placed in the Technology sector, precisely in the CE<sup>1</sup> industry.

## BUSINESS MODEL

The company operates in 3 main categories, aiming for a premium feeling in all:

**On-the-Go:** Headphones and earphones designed for urban and active life, mobility-based, mainly associated with more impulsive purchases that translate a fast-selling process with fixed standard prices.

**Flexible Living:** Mainly portable speakers, home products that fill any room with audio while creating a comfortable environment, these are more expensive, and their prices might diverge according to finishes and accessories.

**Staged:** Premium Speakers, Televisions, products that grant an immersive sound and cinematic experience, these are not standard, being customized. Associated with longer processes due to made-to-order production.

Besides, B&O has Partnerships with several automotive companies and consumer electronics affiliates<sup>2</sup>. The company has also evolved to digital with its website, its B&O app that allows to control products and an Augmented Reality experience app.

B&O focuses on becoming a customer love brand, aiming for the best user experience, and committing with the longevity of its products. As for customer targeting, four distinct segments are the focus: Generation Z, Careerist, Well-established (HNWI<sup>3</sup>) and Ultra High-Net worth [F.4]. The business's focus is mainly the HNWI and, to target these customers the company wants to extend its presence in their lives. "If they (e.g., F1 paddock teams) have the money to be there they also have the money to buy B&O" (Egenhardt, 2021), said the company's Head of Investor Relations. Similarly, it works closely with interior designers, as HNWI frequently recur to those types of services.

## INDUSTRY OVERVIEW

### TRENDS AND FUTURE GROWTH

Higher demand for home entertainment arose with the pandemic, being one of the few segments that was resilient through the situation. It also incentivized digital

<sup>1</sup> CE – Consumer Electronics

<sup>2</sup> Affiliates such as Hewlett-Packard (HP), the computer hardware company.

<sup>3</sup> HNWI – High Net-Worth Individuals

Source: PCMag, TechRadar, WhatHifi, Wired

Feature	B&O Beosound A1	Check
Price	Medium - High	X
Portability	Mini	✓
Smart	Speakerphone	✓
	Alexa-enabled stereo-pairing mode	
Bluetooth	Bluetooth 5.1	✓
Design	Stunning	✓
Sound	Expansive	✓
Battery Life	18 hours	✓
Rank	PCMag	★★★★
	TechRadar	★★★★
	WhatHifi	★★★★★
	Wired	★★★★

Figure 5 Beosound A1 2nd Gen Performance

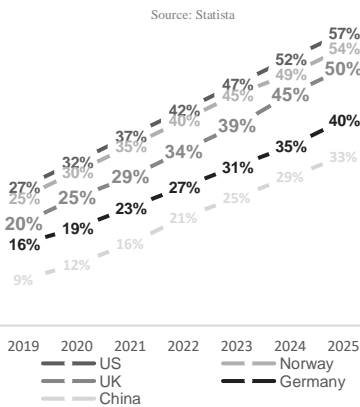


Figure 6 Smart Home Penetration

“Luxury is the journey, not the goal”  
(Danziger, 2020)

Source: Bang & Olufsen



Figure 7 BeoLink Technology

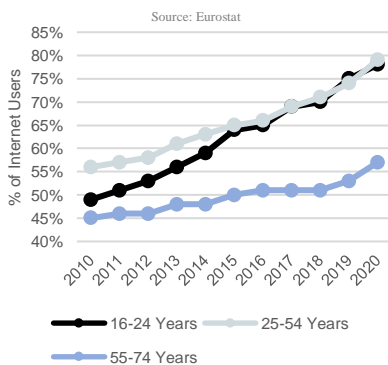


Figure 8 EU Users who bought or ordered goods or services for private use in previous 12 months

devices and online retail sales. Consumer preferences changed, and tech advancements are at an accelerating rate.

**Headphones and earphones** are a growing market that benefits from the adoption of smartphones. The tendency is to opt for wireless, comfortable and with active noise cancellation devices.

Regarding **speakers**, smart gadgets are a rising trend, motivated by growth in high-definition streaming. Here, functions such as Bluetooth and portability are prioritized. According to Statista, 1/4 of US and UK internet users own smart speakers. Beosound A1 2<sup>nd</sup> Gen represents B&O’s success in following trends [F.5].

As per **TVs**, demand is dependent on technology innovations and necessity to replace or upgrade owned models. When choosing, factors such as convenience, screen type and size, resolution are considered. B&O works in a premium setting, specifically inside this denominated blue ocean category.

Given all the indications that the future lies in smart devices, we have observed a major technological shift towards smart and connected homes [F.6]. Being B&O’s business rooted in the underlying devices (TV and Speakers), it is set to benefit in upcoming years as luxury and quality are significant characteristics when investing in home technological products. B&O will benefit due to its commitment to longevity, worker’s tendency to combine personal and work devices and app connectivity. According to Statista [F.6], the US is set to reach 57% in smart homes penetration in 2025. Other countries like France, UK, Norway, Germany, and China resembled as core markets for B&O, are set to follow the same trend. Furthermore, it has entered the Smart Home sector with its BeoLink technology [F.7], enabling communication across products and the B&O app.

The growing number of smartphone and internet users reshaped how the market operates regarding both sales and retail channels [F.8]. Motivated but not established by the pandemic, the trend for consumers to adopt online shopping is deeply felt in consumer electronics. Despite smartphones being its main engine, other market segments offered by B&O are expected to be incorporated in such approach through its online presence.

**CHALLENGES AND RISKS**

As companies do, industries also have risks, either supply (e.g., political, or intellectual property) or demand related (e.g., consumer preferences change). The pandemic brought those risks up and showed nothing must be taken for sure. Given this, worldwide recessions are risks of any business, including this one.

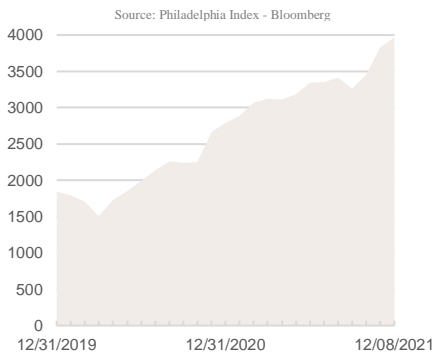


Figure 10 SemiConductor Index

Source: HomeCinema Magazina, Scandification

Website	Quote
HomeCinema Magazine	"guaranteed to make a splash in every interior"
HomeCinema Magazine	"one of the most powerful wireless speakers on the market"
Scandification	"a speaker that blurs the line between audio entertainment, and art"

Figure 9 Beoplay A9 Reviews

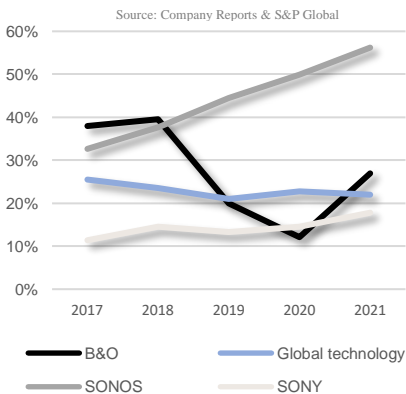


Figure 11 Cash as % of Total Assets

In the technology industry, especially in the consumer electronics sector, price volatility can happen due to component scarcity [F.10]<sup>4</sup>. The supply shortage resulted from the pandemic due to increased demand and factory closures. This brought severe logistics issues as the delivery of goods was delayed and capacity costs increased. According to Forbes, this shortage has been affecting industries from automotive to electronics. B&O deeply suffered due to semiconductors shortage as did others such as Sony and General Motors. Currently, there are different opinions regarding the length of this disruption. Major chipmakers, such as Intel, believe that this problem will extend until the end of 2023. To approach it, technology-based businesses have opted to substantially increase their chip inventories, implement longer supply contracts and increase production capacity. For instance, B&O has increased its production capacity on its best-selling product the A9 speaker [F.9], launched in 2012. Such action was particularly well received by investors.

**INDUSTRY AND ITS PEERS ANALYSIS**

According to Statista, companies in Technological industries hold significant amounts of Cash & Cash Equivalents, [20%;30%] of total assets. If, however, one takes high market cap examples depicted in S&P Global Market Intelligence, this ratio is lower but still substantial. Three reasons are stated, paying debt peacefully, handling emergency situations or tech shocks and to grow through acquisitions. If one takes B&O's example, its ratio seems in line with the tech industry particularly in recent years mainly due to COVID implications. Nevertheless, since 2015 (year it sold automotive department) this metric has been above the industry average but below its fellow peer, SONOS. We do believe this discrepancy of B&O's values has to do with its market niche position.

According to Forbes, Apple stands out for its negative CCC<sup>5</sup>, which illustrates a tremendously capable and effective supply chain. Other successful consumer electronics companies such as Panasonic or Sony follow the same trend. According to GMT data, the sector's CCC is around 78 days. It is key to acknowledge B&O's potential to perform similarly to this high rank competition. However, it becomes equally important to bear in mind we are talking about a turnaround case in which the strategy still needs to accomplish several milestones.

Nevertheless, one should compare B&O's metric with more relative peers. After analyzing such industry players' CCC over the last years, it is possible to observe quite different results within the sector. Considering B&O and its most related peers SONOS, Universal Electronics, Plantronics, and TCL Electronics, the average

<sup>4</sup> Other indexes showed the same trend.

<sup>5</sup> CCC - Cash Conversion Cycle

Source: Company Reports

	2017	2018	2019	2020
B&O	39	16	57	86
SONOS	17	22	14	- 19
Uni.Elec.	107	102	93	109
Plantronics	69	85	91	73
TCL Elec.	- 16	- 1	- 23	- 23
<b>Average</b>	<b>43</b>	<b>45</b>	<b>47</b>	<b>45</b>

Figure 12 Cash Conversion Cycle - Consumer Electronics

CCC over the last 4 years stays between [43;47] days [F.12]. B&O has had volatile CCC, however, in 2018, before COVID it seemed to be heading the right direction.

**B&O'S POSITION**

The CE market is divided into four segments: TV, Radio & Multimedia, TV Peripherals, Telephony and Computing. Regarding B&O, the focus is on the first offering three product categories: headphones, audio speakers and TVs. Nevertheless, if one wants to pinpoint its exact position, the niche place it occupies in the CE market should be considered.

**COMPETITION**

Bang & Olufsen positions itself in a CE luxury market niche. We can consider both low-cost peers and high-end peers [F.13]. Although most of these companies (Harman, Beats, Bowers & Wilkins) are private and, in most cases, supported by big conglomerates, we also found reliable public examples for valuation purposes. Additionally, it would be inappropriate to evaluate B&O's current turnaround context with public tech giants as neither the scale of operation nor the financial structure would enable the most accurate analogy. Consequently, SONOS, the American audio electronics company, is the most accurate peer despite heritage discrepancies. A detailed comparison between the latter and B&O will be made in following sections.

Source: Bowers & Wilkins, Harman, Beats, B&O, Sonos, TCL Elect.



Figure 13 Industry Landscape Breakdown - Public (bottom) and Private (top)



Figure 14 Bang and Olufsen's products throughout time

Source: Wired, PCMag, PM, TechRadar, WhatHiFi, digitaltrends

Website	Overall rank	Quote
Wired	#12 out of 17	"one of the best-sounding small speakers we've ever heard"
Pcmag	#4 out of 12	"Powerful, rich, well-defined audio"
PM	#7 out of 10	"Compact, durable design with great audio"
TechRadar	#11 out of 13	"consistently crisp sound"
Whathi-Fi	#6 out of 18	"Expansive sound, weighty bass"
digitaltrends	#8 out of 8	"you'll be hard-pressed to find another portable speaker this size that provides the kind of elegant sound-staging"

Figure 15 Opinions about Beosound A1 audio quality

**B&O's COMPETITIVE ADVANTAGES**

The following competitive advantages reason for the implied growth rate and ROIC in 2035.

**HERITAGE.** 96 years of history portray Bang & Olufsen's resilience [F.14]. From roof-mounted loudspeakers for circuses and army vehicles to specialized audio electronics, B&O was able to endure through history. While some past turbulence could be pointed at the Danes, their resilience and experience resemble a trustworthy system to investors and end customers.

**DIFFERENTIATION.** High quality of materials (smoked oak wood, stainless steel, aluminum) together with a specialized craftsmanship known for its aluminum anodization yields a minimalistic but aesthetically Nordic design [F.14]. Recently, Beosound Balance won the prestigious iF Design 2021 Awards<sup>6</sup>. On top of that, 68 more projects won in previous years.

**AFFINITY.** B&O doesn't rely on mass production but rather on a tailored approach centered on customer's experience. In fact, owning a B&O product needs to be prestigious as it offers the capacity to provide impressive audio quality vastly

<sup>6</sup> iF Awards - International Forum Design Awards

Source: Bang & Olufsen



Figure 16 AR App

Source: Bang & Olufsen



Figure 17 Beosound Emerge

appeals to the niche market of luxury for wealthier costumers. The company then drives loyalty through its personalized customer experience, by offering high-end products that meet the beliefs and finally through personalized aesthetics that appeal to HNWI. For instance, its Bespoke solutions, allows for customizability of products.

**FUTURISTIC.** Besides, the company is extremely innovative, namely because of its out of the ordinary design when you think about an audio gadget. B&O was one of the first to produce a radio that ran on alternating currents rather than batteries. Since then, the company keeps challenging the typical way of doing things, betting on products such as a minimalistic speaker that looks like a book. Another example of B&O's technological driven mindset relies on its Augmented Reality experience app. It allows customers to visualize products in their living space or on themselves. This is a dominant trend in the CE market according to Statista.

**BANG & OLUFSEN CURRENT CONTEXT**

**WHY NOW?**

Bang & Olufsen's previous CEO, Henrik Clausen, left the company in 2019, 3 years after being hired, due to bad performance: sales decline and excess inventory. Even though the brand has been turbulent for the past 15 years, several changes in their management team and strategy failures, it is believed that now is the time. Such faith relies on 6 improvements made last year or to be made over 2022.

Primarily, the company has been able to consistently deliver on their targets with its turnaround strategy, proposed by its most recent team, being able to improve profitability in 2021 even with the impact of covid. Foundation was perfected through new board members (CEO Kristian Teär and CFO Nikolaj Wendelboe). Stephen Zadesky, former Apple Senior Executive that participated in the development of the first iPod and iPhone, joined B&O as external advisor in the beginning of November 2021. He aims to "support the company's future product portfolio" with his vast experience in products scalability (Stephen Zadesky joins Bang & Olufsen as External Advisor, 2021).

Although B&O primarily works with distributors, it never had access to data. Recently, it has established a way to track their sell-out data, thus being able to better understand consumers preferences. With an improved vision on what their demand consists of, it was able to efficiently allocate production costs. Additionally, this inevitably ends up allowing for more customer-oriented product availability.

The Danish company has also focused on the development of their software, hiring engineers to mitigate their problems with products that are more suitable for the

Source: Bang & Olufsen

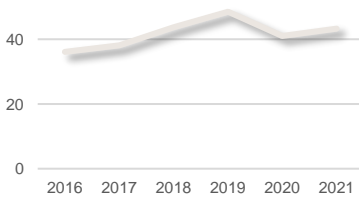


Figure 18 Gross Margin (%) throughout time

Source: Bang & Olufsen



Figure 19 EBIT before Special Items (%) throughout time

Source: Bang & Olufsen



Figure 20 Fernando Alonso x B&O

Source: Bang & Olufsen



Figure 21 Beosound Level

Source: Bang & Olufsen

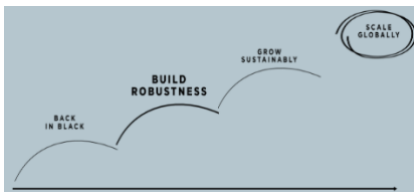


Figure 22 Stages of Turnaround Strategy

Source: Bang & Olufsen

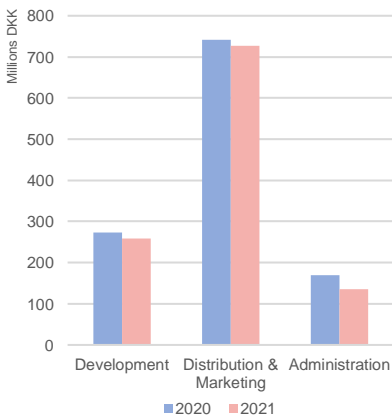


Figure 23 Cost Reduction Programme

future. This last quarter, new employees were hired, particularly in software and engineering areas to build the right teams, capabilities, and structures.

Concerning their social media approach, B&O has been developing its presence in the area through valuable marketing efforts with fast results, mainly through influencers. For instance, Trent Alexander-Arnold, Liverpool FC player, and Fernando Alonso, Formula 1 driver, express the company’s determination.

About ESG<sup>7</sup>, there is a growing concern, even though it is generally difficult topic to consolidate with the Consumer Electronics sector. An introduction of a circular product design to support its longevity commitment and implementation of a low-carbon economy are some of the goals the company has been working towards. In September of 2021, Beosound Level was awarded as the first ever Cradle to Cradle Certified® speaker in the CE industry. This certification is only given to products that enable a sustainable tomorrow, which translates the company’s desire to have lifelong, environmentally friendly, products. This year, B&O was nominated for “Best Company” in the Sustainable Development Goals Tech awards and finished in the top 5.

According to an ABG Sundal Collier Investment Bank Analyst and to B&O’s Head of Investor Relations, the company is planning on releasing a Loyalty Program that would reward current customers and retain them, increasing brand affinity. B&O wants to create an ecosystem for their customers where those would be able to register in the app and benefit from special services. This program would help sell-out data performance and, consequently, improve product functioning through potential economies of scale. Nevertheless, as a long-standing company, it still is complicated to access data as to which products long-standing customers own.

**STRATEGY**

The pandemic forced tremendous business implications and it is safe to say B&O’s new approach allowed operations sustainability, while building the basis for a smooth recovery. Since April 2020, focus has been on its new strategy, built on 4 stages [F.22].

Regarding Back in Black, B&O tried to mitigate COVID implications mainly through a cost reduction programme implemented in March 2020 aiming to optimize Staff and SG&A costs [F.23]. The company was devoted to update its eCommerce. Besides, it wanted to build a solid product portfolio through solving connectivity issues and launching innovative products. Marketing activities were headed for digital marketing and software development. Contemporaneously, B&O started to

<sup>7</sup> ESG – Environmental, Social, Governance

implement essentials of the upcoming phase: growing its presence its six core European markets while building brand awareness and operational basis on two core Asian markets.

In May 2021, B&O’s strategy started the Built Robustness stage. This phase is believed to end in 2030 as the company will not rush its operations nor engage in risky capital structures but rather use its brand affinity and organizational efficiency to follow an organic growth strategy.

B&O firstly thrives to prove a scalable growth formula through both an oriented marketing and suitable product portfolio. Secondly, it prospers to build upon operational growth by increasing its presence in European markets, creating the same in Asia and expanding strategic partnerships. B&O already extracts the bulk of its revenues from EMEA thanks to its solid brand recognition together with an effective operational and logistical landscape. While at this juncture it believes to be well positioned to keep delivering absolute positive future growth from monobrand stores, the exact opposite happens in the American market. The Latin region lacks sufficient HNWI to justify an investment and, going north, it has found a large but fragmented market with both well-established players (e.g., Sonos, Beats, Bose, Marshall, JBL) and customers who generally would be willing to spend extra money on national products. Therefore, the strategy in East mostly relies on retail partnerships worthy of a robust customer recognition such as BestBuy, Horizon, Amazon, and Cisco. The collaboration with Cisco is recent and strategically important as it is a large multinational conglomerate likely to bring brand awareness to B&O.

It was assumed that by 2030 the company will enter Growth Sustainability. While most drivers are likely to stabilize until 2035, others should remain as high as in previous expansionary years to keep driving the business forward. Finally, the Scale Globally phase was not forecasted due to the distant timeframe. Given B&O’s link to technology, it is believed that in 18 years the world has already experienced tech shocks which completely change the industry’s paradigm.

**STRATEGIC SUITABILITY**

It is essential to analyze if the strategy foundations are set accordingly. To verify if such is true, data on both Monobrand stores and High Net Worth Individuals Worldwide extracted from B&O’s official website and Statista was used.

Observing Figure 25, one can identify B&O’s strategic focal point on its core markets: France, UK, Spain, Switzerland, Denmark, Germany, South Korea, and

Source: Bang & Olufsen

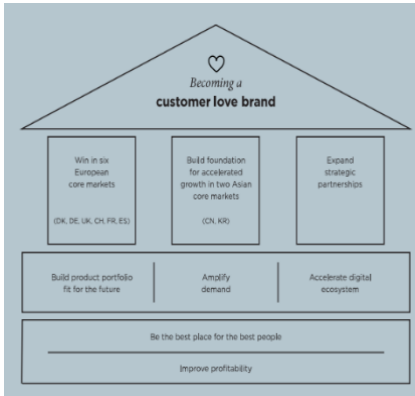


Figure 24 Build Robustness Stage

Source: Bang & Olufsen

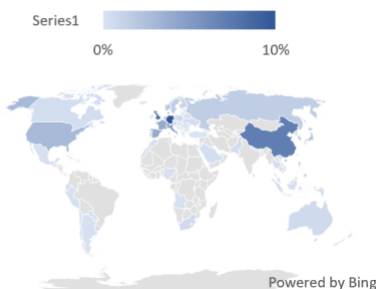


Figure 25 B&O's Monobrand Stores

China. On top of that, it is as important to notice the low quantity of monobrand stores in America when compared to other regions for reasons already mentioned.

By considering Figure 25 and 26, it is evident that the two data captions correlate quite well, as B&O's Monobranded Stores are usually located in countries where HNWI are positioned. Secondly, comparing the top 15 ranked countries in the mentioned captions, one concludes the Danes have 10 focus points exactly in 10 out of the 15 places where wealthy entities are. As the only setback in this observation, Denmark represents the second country with more Monobrand stores but falls short in the rank of places with the greatest number of HNWI, n<sup>o</sup> 18. Still, Denmark is the second most revenue generating country of B&O (10%).

A special focus must be given to China, where B&O's strategy is expecting to extract most future revenues. Here, the company already operates on 32 monobranded stores, representing not only the fourth country in that caption rank but also the second country with more HNWI. The Asian market has evolved a lot during the last years [F.27], Asiatic HNWI have been substantially increasing at a superior pace than America or EMEA. With a CAGR of 108% in 10 years, which relates to its GDP growth, it all points out for it be a reliable source of revenue.

It was concluded that this strategy is suitable and should lead to positive results, reasons why it was assumed that the company will want to successfully follow it.

**REVENUE, COST STRUCTURE AND MARGINS**

In 2020/21 the company presented revenue of DKK 2.6Bn, EBIT before Special Items of DKK 38M (1.4% margin) and FCF of DKK 119M. Currently, most of the revenues come from EMEA (49%), region that also delivered the most profit, and from their staged category (38%). As for the channel, digital ones grew significantly but monobrand remains the largest and most-revenue generating.

Even though the pandemic affected all industries, the company's turnaround strategy, its cash policy, and the rights issue, allowed it to go beyond expectations and achieve growth comparing to last year's results [F.30]. In 2021 B&O reached profitability, while creating foundation for future growth.

As for costs, due to scarcity of electronic components, production and logistics costs went up, especially in 2020, resulting in a negative EBIT of DKK -126M. Although revenues decreased significantly, capacity costs increased as percentage of sales [F.29]. The company uses microchips for "many of its products" as stated by the Wall Street Journal. This shortage affected prices, which went up "by an average of 2%", but also gross margins. B&O has already implemented longer term contracts with suppliers and looked for alternative methods of transportation (e.g., airfreight). The outlook of such shortage does not

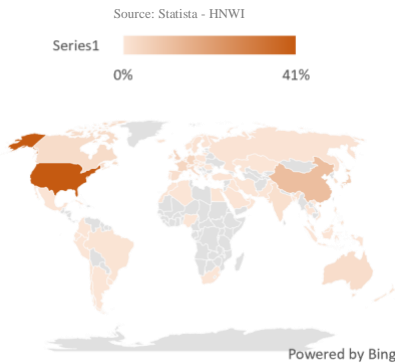


Figure 26 HNWI Density Worldwide

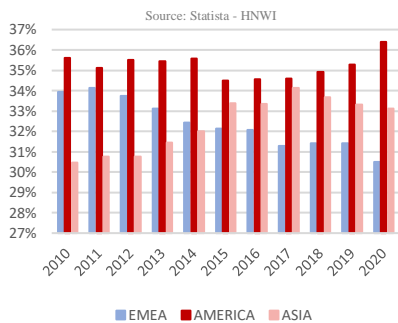


Figure 27 HNWI Weight World

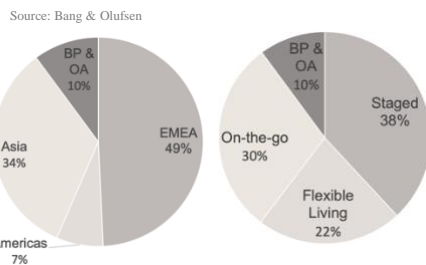


Figure 28 Revenue Breakdown

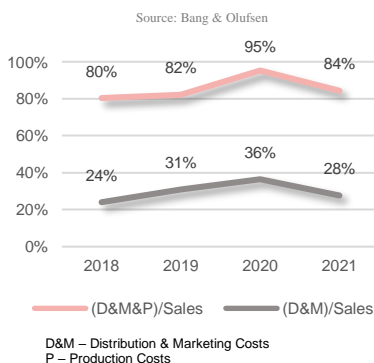


Figure 29 Costs Evolution as a % of Sales

Source: Bang & Olufsen

(in millions DKK)	Outlook 21	Actual 21	Change
Revenue	2 200	2 629	429
EBIT bef. Special items	-100	38	138
FCF	-200	119	319

Figure 30 Exceeding Expectations after COVID

look good, being expected to affect the Danes until, at least, 2023. Consequently, B&O has implemented the mentioned cost reduction plan, which has achieved an annual run-rate of DKK 202M in relation to 2022. However, this was partially offset by employee bonus provisions of DKK 11M to compensate for salary reduction during COVID's outbreak.

About margins, it is clear the company has high margin in Brand Partnering & Other Activities. This segment requires low levels of maintenance since B&O will have a complementary role to partner's production.

About product sales, the category with highest margin has been Flexible Living for the past 2 years [F.31]. Not only has this been the company's most comfortable margin but also one expected to keep performing at similar standards. Additionally, it was the least affected by COVID, with margins between [47%;51%] in the last 3 years.

In the Staged Category, B&O believes there is still room for improvement. It suffered a considerable reduction of margin from 2019 to 2021, even though this last is already an improvement from the pandemic's impact. According to the Head of Investor Relations, this category is a "blue ocean" with no peer offering similar high-end services with such customization levels. It is expected to invest attempting to create more awareness of Staged products through marketing.

The On-the-Go, has the tiniest and more volatile margins. It is the one more influenced by the competitive landscape and the one that suffered the most in 2020. In the future, the company aims to adapt its strategy here, to compete while balancing this capability with its higher prices.

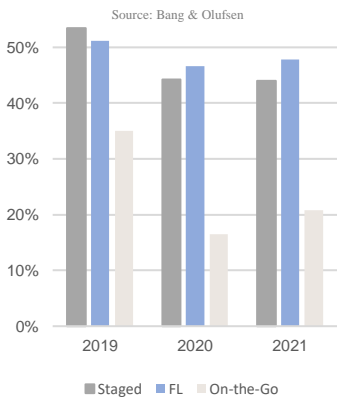


Figure 31 Past Gross Margin

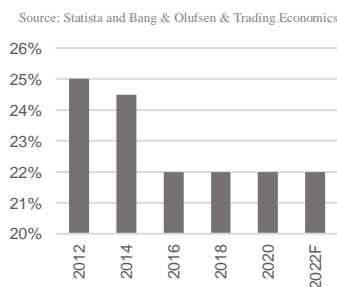


Figure 32 Denmark Statutory Tax Rates Evolution

**FISCAL POLICY**

In 2021 the company reported an effective tax rate of 29% resulting in a tax shield of DKK 10M, given the reported negative earnings. Companies based in Denmark are subject to a statutory tax of 22% since 2014, a lower rate than past years to sparkle business activity. Such is likely to remain constant, which makes our case when assuming a 22% statutory tax that, with adjustments, equals the effective tax for the year. Amongst the adjustments, the ones related to deferred tax assets, changing tax rates in foreign subsidiaries and Non-deductible costs, non-taxable income are counted as core and projected as an average of past years.

**SHAREHOLDER'S STRUCTURE**

Geographically, 61% of capital belongs to Danish based Shareholders, representing around 95% of shareholders. The other 5%, characterised by international investors, own 49% of the company demonstrating a valuable source for growth.

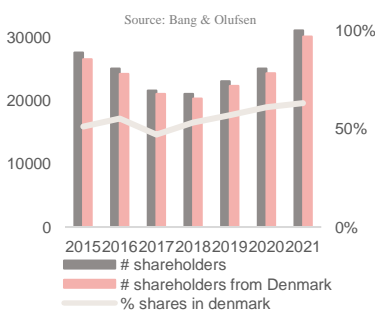


Figure 33 Major Shareholders and their origin

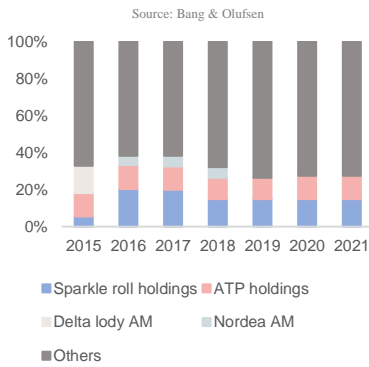


Figure 34 Major Shareholders composition

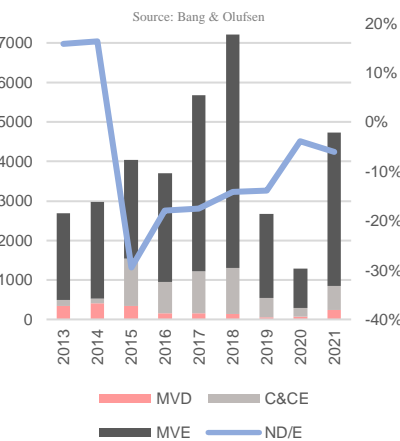


Figure 35 Evolution of Capital Structure

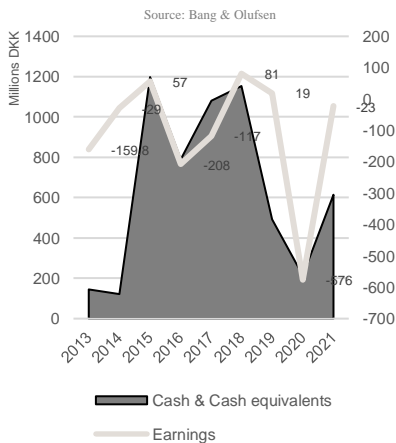


Figure 36 Cash & Cash Eq. and EPS Evolution

Source: Company Reports

Cash Ratio	2019	2020	2021
B&O	0.6	0.3	0.7
SONOS	0.8	1.0	1.3
TCL EI.	0.4	0.3	0.2
Universal EI.	0.3	0.3	0.3
Plantronics	0.4	0.4	0.2

Figure 37 B&O and Peers Cash Ratio

Despite an affinity base of 31000 shareholders, the top five hold nearly 43%, were ATP<sup>8</sup> and Qi Jiang should be highlighted. The Danish Pension fund, which engages through its active ownership policy, has full trust on the business model: "Our trust in the B&O brand is intact," Wiinblad. Qi Jiang is a billionaire owner of Sparkle Rolls, distributor of luxury products within various market segments. There has been speculation about a tender offer. It might be related to potential synergies coming from a potential retail engine to boost B&O's Asiatic ambition.

### CAPITAL STRUCTURE

B&O's capital structure is mainly composed by equity, reaching its highest market value of DKK 5 923M in 2019. In May 2021 the share price was DKK 32, with a volume of 120.659.715 resulting in a Market Capitalization of DKK 3 878M. Although its lagged return on equity of -4% represents a red flag, one should consider its recover from -41% in 2020.

There are two equity events worth of looking at. The share buyback programme of 2019, used to showcase the company's sustainable and profitable position. Although cancelled in 2020 due to the undesirable free cash flow, it initially aimed at buying DKK 485M in shares. The other being the 2021 rights issue, 81 848 058 announced shares were subscribed in 98.9% with net proceeds amounting DKK 359M. Although it caused both an increase in share price and shareholder dilution, it was used to go through COVID-19, which shows management boldness.

Regarding debt, the company has sufficient liquidity of DKK 594M and a strong solvency ratio of 1 in 2021, which together make the case of B&O's healthy balance sheet. Its debt consists of Lease liabilities, Mortgage Loans, and Bank Loans. Looking at Figure 35<sup>9</sup> one can conclude B&O barely engages in debt activities, which is no surprise given its cash & cash equivalents. Therefore, B&O's usage of similar amounts of debt going forward seems reasonable.

The business follows a conservative cash policy since 2015, resulting in negative Net Debt to Equity ratios [F.35]. This was tremendously impacted in 2020 as the board was forced to use cash reserves to keep up with operational costs. It is believed B&O does so due to performance and uncertainty. Linked to the first, the company states upcoming strategic challenges, past earnings volatility, and cyclical insufficient results as reasons to hold cash. Additionally, it does so to address uncertainty as the industry is prone to frequent changes and Small-Medium sized investments may be needed to keep up the pace. Operating cash

<sup>8</sup> ATP Holdings - Arbejdsmarkedets Tillægspension  
<sup>9</sup> Book value of Debt was used as a proxy to Market value of debt

as percentage of revenues in the given year was assumed equal to 5.2%, which represents the lowest ratio of Cash & Cash Equivalents-Sales in the last 11 years.

**RISKS**

B&O’s focus has always been on combining modern technology with high-end design to create timeless products. This has put it as an industry niche and thus, product prices are high. Consequently, it has cyclical demand, being able to sell as the economy is doing well but barely floating as the opposite happens [F.38].

Another risk comes from the fact that standard technology premise is rooted in performance. Being a luxury good does not compromise performance but rather the price at which performance is achieved implying consumers may prefer function over luxury [F.39]. B&O Play was a budget-friendly sub-brand that represented most of the company’s revenues. To mitigate this discrepancy, it was phased out and all products started to sell under the primary name.

The company is surrounded by low-cost competitors like Bose, JBL, Sennheiser. One could ignore this threat when taking into consideration only the high-end niche market in which B&O operates. However, this high-cost competitors such as Beats, or Harman belong to massive tech groups such as Apple and Samsung, respectively. This could be a headache for B&O as they have broader brand awareness and more flexible capital structure to keep up with the tech wave.

One should also mind that Partnerships & Other Activities, being a comfortable margin source, brings risks. In automotive partnerships the company benefits through licensing income. For example, Bentley offers the option of using either Naim or B&O audio systems in certain car models. However, the manufacturer recommends Naim [F.40], with which it has an exclusive partnership since 2008. B&O incurs the risk of not being the preference brand, which can weaken its image.

Additionally, as Bang & Olufsen is rooted in Denmark, it is important to mention currency risks if DKK loses value in relation to other currencies from geographies where the company ditches its operations. Either way, this is something considered in the forecasted caption “Exchange rate gain (loss)”.

**VALUE DRIVERS AND FORECASTS**

**PRODUCT REVENUES**

When reformulating the company’s statements, Revenues were distributed according to regions. This choice considered the described geographical strategy, the different product types and the distinct prices ranges within each category. To ease the forecasting process and better discriminate the strategy, drivers such as

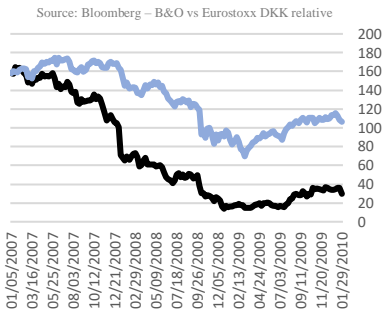


Figure 38 Stock Performance Subprime crisis (Rebased)

Source: Amazon Spain

Brand	Price
Sound Core Flare 2	80 €
Sony SRS - XB23	100 €
EU BOOM 3	125 €
JBL Flip 5	130 €
Sonos Roam	199 €
Beosound A1	211 €
Bose Portable	419 €

Figure 39 Portable Speakers Prices

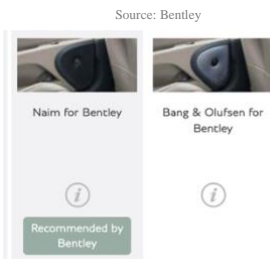


Figure 40 Bentley's Personalization Options

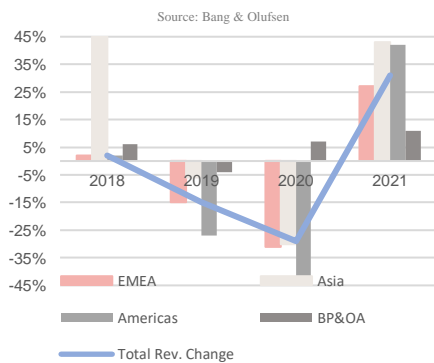


Figure 41 Growth of Revenues in Local Currency

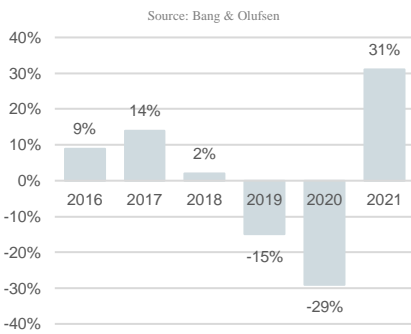


Figure 42 Growth of Revenues in Local Currency

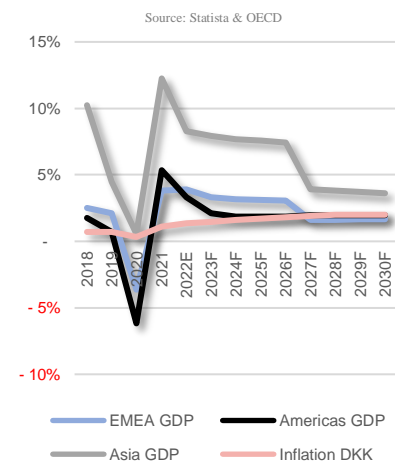


Figure 43 GDP growth rate and DKK inflation

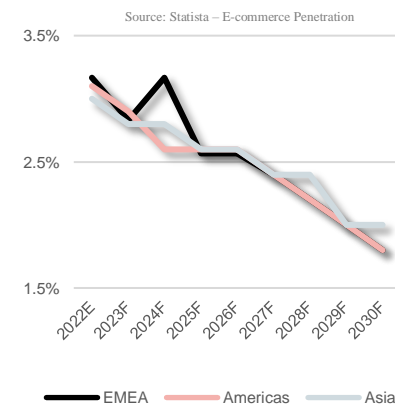


Figure 44 E-Commerce Penetration Rate

Stores Revenue (combining mono and multi brand stores) and Online Revenue were considered, according to the region of operations and channels used<sup>10</sup>.

Looking at past growth of revenue in local currencies allows to better understand commercial success in local economies. B&O has had the lowest growth in BP&OA<sup>11</sup> while product sales have evolved in a similar trend across regions. It is also noticeable that, before the pandemic, the company had showed a large growth in local currencies in Asia. In 2021, local currencies growth has been reassembled.

**Physical Stores Revenue**

Using past data, ARPS<sup>12</sup> was calculated, varying with the GDP growth rate of the region and inflation of the Danish Krone [F.43]. It should be acknowledged that B&O uses shops as a brand awareness driver rather than just a revenue one, with showrooms that provide good customer experience. Moreover, B&O’s focus is on having more profitable stores, not just more in total. Changing the number of stores does not totally depend on B&O since it mainly works with distributors, which are the ones that make the investment, either through a multi or mono brand channel. Besides creating awareness in customers, it is necessary to create awareness between distributors as they will only be interested in representing a company with recognition and potential. With that in mind, in the first years the company is not expected to immediately increase its distributors with more stores as it focuses on customer and distributor awareness. Later, it will solely partner with distributors on profitable and crucial physical stores.

**eCommerce & etailers Revenue**

Using Statista as source, as main driver of this caption the growth of each regional E-commerce penetration rate within CE was used [F.44]. To forecast its percentage of revenue, the weight of the online channel was evolved over the years according to this driver, using the 2021’s distribution of revenues per channel as basis. Having 2021’s eCommerce percentage of total sales, its absolute value was extrapolated from both relative value to total revenues and absolute physical store sales (rule of 3).

**EMEA**

B&O states it wants to win in 6 core European markets (DK, DE, UK, SW, FR, ES) so it is expected it to gain position there until 2030, during “Build Robustness”.

<sup>10</sup> In the first 3 years of past analysis (2018, 2019, 2020) the company did not provide information about distribution of revenue per channel which is why in Graphs 18, 19, 20 those years are in a darker shade to represent total sales and to allow for some comparison in total value.  
<sup>11</sup> BP&OA – Brand Partnering & Other Activities  
<sup>12</sup> ARPS - Average Revenue per Store

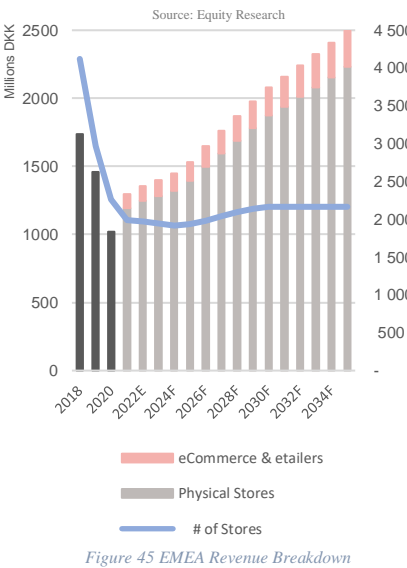


Figure 45 EMEA Revenue Breakdown

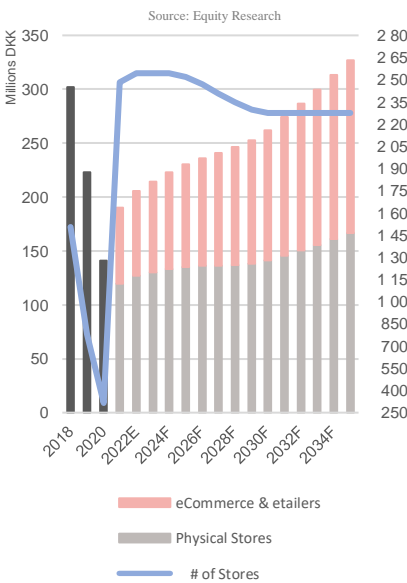
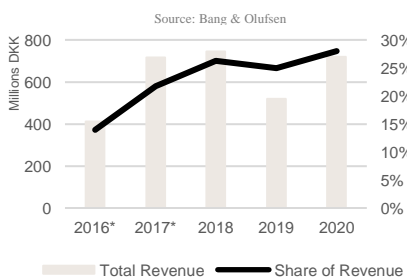


Figure 46 Americas Revenue Breakdown



\* Relative to Greater China which means it includes Mainland China, HK, Korea, and Taiwan

Figure 47 China, South Korea, and HK Revenue

As per 2021, stores revenue represented 92%, while the online channel represented 8%, a growth driven by the pandemic's digital demand creation. Considering E-channel, it is expected to grow to 11% of total sales in 2035, as consumer preferences change, and people start opting for these more convenient conduits.

The pandemic combined with cost reduction obliged the company to close stores and focus on profitability, which is projected to keep happening over the next 3 years. After, in 2025, B&O will start to "invest" in new stores until 2030 through small percentage increases in the number of stores. Then, and once it has gained the position it aims for, it will stabilize the growth in number of stores until it has 2 169 stores in 2030. Regarding ARPS, it is expected to increase from DKK 0.6M in 2021 to DKK 1.03M in 2035, due to inflation, economies' growth, and trends.

**Americas**

It was the most impacted region in 2019 and 2020, with a significant amount of store closures and it is a region that drives low total revenue. In 2021, B&O tried to regain position, increasing the number of stores more than 8x.

Americas have higher audio products offer. So, due to high competition, their position was never that strong. "Over 46% of respondents believe that products manufactured in America are better quality than those manufactured in other countries." (Coates, 2020). Furthermore, the Danes do not have a promising solo strategy in this region. It is expected that the company ends up reducing their number of stores at a slow pace from 2025 on until 2030, stabilizing it from then onwards with from DKK 0.05M in 2021 post-pandemic to DKK 0.07M in 2035. B&O will likely opt to create brand awareness through partnerships rather than through an increase in stores.

On the other side, online channels represented 38% and physical stores 62%. This might have to do with this countries' acceptability and preference for fast and remote channels. We expect it to significantly increase, considering the growth in the penetration rate of this segment, ending 2035 with 49% of revenues from online channels and 51% from physical stores.

**Asia**

Given B&O's strategy to build foundation for growth in China & South Korea, it was assumed that it will continue to put effort into gaining position here as it has been doing so far, which is clear to see when looking at Figure 47. For this, one of the core focuses will be to increase the availability of B&O's products there. According to Statista, the market of personal luxury goods in the Asia-Pacific region is

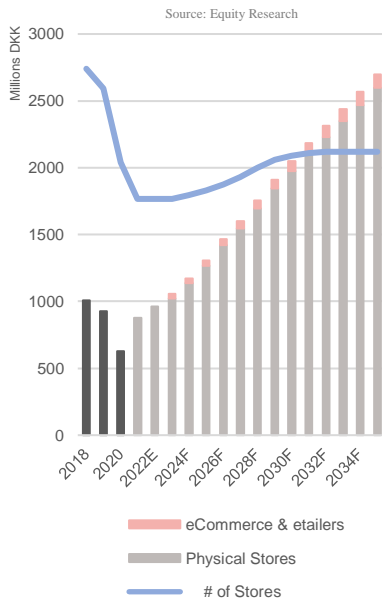


Figure 48 Asia Revenue Breakdown

Source: Bang & Olufsen

2021
Audi
Aston Martin
Ford
Bentley
Lamborghini
LG
HP
Harman
Saint Laurent
Google
Apple
Amazon
Xbox
Astraulis
Verizon
BestBuy
Berluti
Running
Rapha
Publicis Sapient

Figure 49 B&O's Partnerships

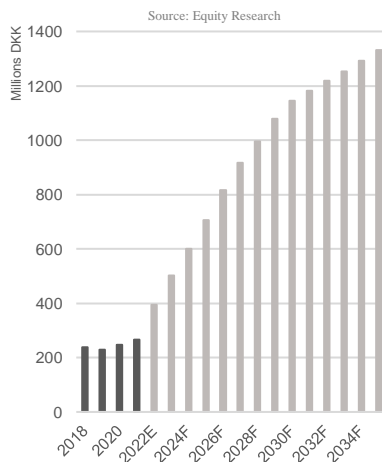


Figure 50 BP&OA Revenue Breakdown

expected to have a CAGR<sup>13</sup> of 7% between 2020-2025. McKinsey states that “In 2018, fewer than 30 million Chinese consumers accounted for one-third of global spending on luxury goods, and McKinsey projects that their outlay will almost double by 2025. “ (Institute, 2019). So, it is expected that available stores in crucial locations until 2030 will increase, steadying in 2032 with 1273 stores. This investment in stores will be worth it through a later increase in ARPS, which started in 2021 with DKK 0.83M and evolved to DKK 2.04M in 2035.

Regarding the online channel, it will likely become available in 2023 and responsible for 3% of revenues, conclusion taken after reading reports and talking to the Head of Investor Relations. In the end, 91% of Asian revenues will come from physical stores and 4% from online channels, given its expectable slow response.

### BRAND PARTNERSHIPS AND OTHER ACTIVITIES REVENUES

About other activities, the company used to coordinate innovation camps, summer camps where participants joined in an intensive innovation process. Additionally, it also showcased its products in events such as Milan Fashion Week and Paris Fashion Week. Despite not having an explicit caption that considers other activities, this likely works as a mechanism to attract new partners and consumers, being indirectly considered in the model.

Partners can be companies with which B&O makes collaborations (e.g., product launches), companies to which it serves as a supplier (e.g., Bentley) and retail partnerships (e.g., Amazon). Contracts with partners are a specific caption that is volatile and hard to estimate. Even though we acknowledge that partners come and go, it was assumed that the total number of partners that the company has now will remain. There is no clear pattern so we assumed that their main investment in new partnerships will be from 2022 to 2026, with more than 3 partnerships per year, then steadily decreasing until the total number of partners stabilizes with an absolute value of 49 partners in 2030. As the company grows it gains visibility and power, benefiting more from partnerships. This caption also works as a marketing mechanism, and it is believed that American partners will be a core focus to gain brand awareness in that region.

Focusing on ARPP<sup>14</sup> we have projected it to increase significantly in the first years of the strategy, until 2027, while the company grows finishing with an ARPP of DKK 24M in 2035.

<sup>13</sup> CAGR – Compound Annual Growth Rate

<sup>14</sup>ARPP - Average Revenue per Partner

**COSTS**

**Production Costs**

After meeting with outside analysts from ABG Sundal Collier Investment Bank and Carnegie Investment Bank and with B&O’s Head of Investor Relations, the company’s perception regarding margins for each product category were discussed. This caption was then forecasted having those opinions in mind together with past data and our beliefs about what the future of the company holds.

Typically, the more you produce, the better the conditions the company is subject to with suppliers and the production process itself. Possible cost benefits emerge as a company expands.

As the company did not discriminate units produced nor unitary production cost, margins were used as a forecasting tool [F.51]. Unlike other costs, Production Costs were not deducted for Special Items, Staff Costs, Depreciation, Amortization, and Impairment as, to make an analysis with past data, the total value needed to be considered.

Firstly, we analyzed past performance and respective weights for each category. Considering what was mentioned, weights and future margins were inputted. One should mention that the company recently improved its sell-out data performance, which will likely lead to an enhancement of margins. Besides, until now, new management has showed ability to keep up with goals even in a post-pandemic situation.

For the Staged Category, the company is expected to slowly increase its margin as it gains awareness, this category is considered the company’s “blue ocean”. Being the most expensive category and the one with less competition, it is perceived to be able to provide better margins. Margin will increase up to 55% in 2035, with a higher growth pace in the Built Robustness phase and then pacing down as the company reaches the next phase [F.52]. Keeping in mind its specific high prices and its projected increases, the weight is expected to slowly decrease to 36%, stabilizing at this value in 2030.

As per Flexible Living, the company seems comfortable with its margin. The pandemic boosted especially this category. Still, an improvement is expected in the margin, increasing up to 55% in 2035 [F.53]. This growth will be gradual and steady in 2032. Regarding weight, it is predicted to increase 2 pp above the value of 2021 (22%) in 2024 (24%), kept constant from there on.

About On-the-Go, an investment to improve and later stabilize margins will be made. Margins are expected to increase to 33% in 2027, kept constant from there

Source: Bang & Olufsen

The company does not discriminate the amount of Fixed Costs

<b>Gross Margin ↑</b>
Favourable Product Mix
Price ↑
Revenue/FC ↑

Figure 51 B&O’s Motives for Gross Margin Improvement

**Bang & Olufsen in April began raising prices by an average 2% across its portfolio (Trentmann, 2021)**

Source: Equity Research and Analyst Estimates

Category	2021	2022	2030	2035
Staged	44%	46%	55%	55%

Figure 52 Margin Evolution

Source: Equity Research and Analyst Estimates

Category	2021	2022	2030	2035
FL	48%	46%	54%	55%

Figure 53 Margin Evolution

Source: Bang&Olufsen and JBL



Figure 54 Beosound Explore vs JBL Clip 4

Source: Equity Research and Analyst Estimates

Category	2021	2022	2030	2035
OTG	21%	26%	33%	33%

Figure 55 Margin Evolution

Source: Sony and Bang & Olufsen



Figure 56 Sony WF1000 XM4 vs Beoplay EQ

Source: Equity Research and Analyst Estimates

Category	2021	2022	2030	2035
BP&OA	96%	97%	97%	97%

Figure 57 Margin Evolution

Source: Equity Research

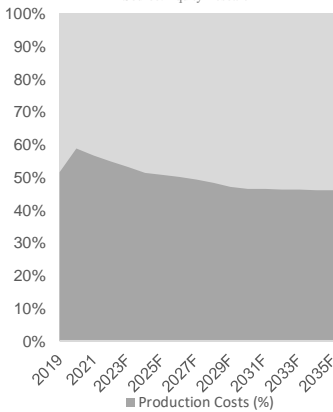


Figure 58 Gross Margins and Production Costs (%)

Source: Statista - Aluminium Prices

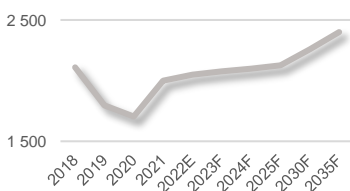


Figure 59 Aluminium Prices in American Dollars (per square meter)

**"By not spending on marketing, they are missing out on an enormous amount of business."** (The importance of a Marketing Budget, s.d.)

Source: Instagram



Figure 60 Trent Alexander Arnold with B&O

on [F.55]. This phenomenon can be justified through the company's expected efforts to improve its competitiveness in conjunction with these products. However, the weight will remain constant as this category already deals with high competition.

In this last 2 categories, as observable in Figure 54 and 56, the company has been producing competitive products. Even though more expensive, it is trying to narrow the gap between itself and the market while still offering a premium touch.

Now focusing on BP&OA, its margin is high [F.57], and its weight will remain constant.

Considering all these mentioned captions, the total margin was computed translating an escalation to 52.6% margin in 2035. This growth is noticed mainly in the 1<sup>st</sup> phase of the strategy, stabilizing in the 2<sup>nd</sup> phase [F.58].

Having the margins<sup>15</sup> and sales, production costs were the remaining value. Costs of production vary according to several factors such as the price of raw materials and electronic components, logistics and freight costs, labour, packaging, etc. As one of the main resources is its aluminium anodization (with its supplier being Alumeco, a small Danish producer) the variation of its price was incorporated [F.59].

**Distribution & Marketing Costs**

B&O works with distributors worldwide. As the company expands, costs of distribution will most likely increase and later stabilize once position is gained, especially in target markets.

Branding is one of the factors that most distinguishes B&O and recently it has focused on an influencer strategy. Marketing costs relate to campaigns, website perfections, promotions aiming to upturn their customer base while stimulating brand awareness and loyalty.

These costs are projected to increase as the company grows according to inputs made, the evolution pace in the long run will be reduced but still growing as this caption is seen as a driver of value, mainly due to marketing.

**Employees**

To estimate the percentage change in number of employees we need to keep in mind yearly absolute variations as some employees are fired, others hired. The

<sup>15</sup> These margins were calculated before adjusting for the growth in aluminum prices.

company has implemented a cost reduction programme and consequently reduced the number of employees over the last years [F.61].

In the next years the Danes will look for talented personnel to enrich technical capabilities (engineers, software experts and marketing specialists). The goal is to be a good working place for proper people, while building a solid product portfolio. B&O will hire cautiously, pacing the rhythm from 2030 on but maintaining some evolution as it grows.

**Administration Costs**

As per this type of costs, that mostly relate to administrative personnel, management, office costs we assumed a part is fixed relating to permanent office costs such as accounting, legal counsel, supplies, insurances, etc, accounting for 50% of the total value. The remaining costs, the other 50%, varies according to the number of employees the company has.

**Staff Costs**

To ease calculations, all staff costs were aggregated (except for the ones production related) in another caption, making them dependable on the total number of employees and average cost per employee. To compute average cost per employee an average of the last 4 years was used and assumed to remain constant. So, this caption will vary according to total number of employees.

**Development Costs**

In its strategy B&O states it wants to build a product portfolio fit for the future. As companies depend on the existence of innovations and their ability to adapt to the changing humans needs, the number of products launched and updated kept changing throughout the years. The company also has updated versions with new colours, new details that also require research, however, these costs are assumed to be much lower. As so, they were not considered. New products and updates are the reasons that make this caption oscillate the most. After 2032 and getting closer to their growth sustainability stage, the number of products launches & software updates was kept constant at 5 until 2035. The average cost per launch is specific on the project developed so we assumed, for simplicity, an average of the last 4 years and kept it constant during the forecasted period.

**Financial Result**

B&O’s financial activities are prone to negative yearly results. Regarding interests, there are: interest expenses to banks and interest expenses on lease liabilities.

Source: Bang & Olufsen

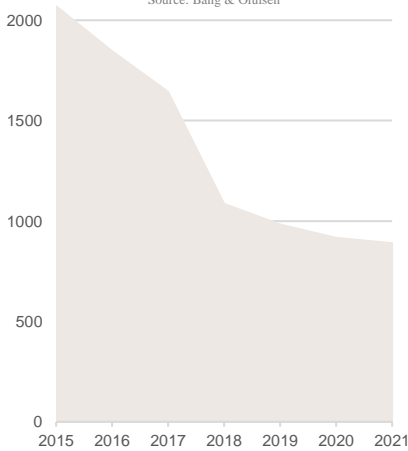


Figure 61 Evolution of number of employees in total

Source: Bang & Olufsen

2020
Beosound Balance
Beosound Stage
Beovision Harmony 65
Beovision Harmony 77
Beovision Harmony 88
Beoplay E8 3rd Gen
Beoplay H4 2nd Gen
Beosound A1 2nd Gen
2021
Beogram 4000c
Beolab 28
Beolit 20
Beoplay H95
Beoplay HX
Beoplay Portal
Beoremove Halo
Beosound Level
Beovision Contour
Beovision Contour 48
Beovision Eclipse
Beoplay E8 Sport
Beosound A1 Gen Couples
Beovision Eclipse 65 2nd Gen

Figure 62 Product Launches (white) and Updates (blue)

The first is essentially related to mortgage and bank loans, being computed as an average of the last 4 years interest percentage (17%) of previous year Bank Debt. The argument being that the interest on this debt is an activity related to previous year's Balance Sheet Debt amount.

Regarding interests on lease liabilities, as the caption indirectly points out, it is computed as a percentage of the current year lease liabilities and then used as an average (5%) of the available data going forward, which equals the reported incremental borrowing rate. Here, interests are reported in the same period in which the debt was contracted.

Additionally, other financial captions were included in the reformulation process. Even though "other financial income" caption has a relevant amount within financial activities, it lacks concerned information so assumed to be zero when forecasted.

Exchange rate gains value is based on conversion rates to DKK and predicted inflation rates of major currencies noted in each geographical footprint of operations: EMEA (excluding Denmark), Americas and Asia. Exchange rates were adjusted to changes in inflation rates of both Denmark and the region in question. After summing the values, we add "Adjustments for Other currencies applied, Raw materials, translation hedges" getting the final value of Exchange rate gain (loss).

**BALANCE SHEET FORECASTS**

**Tangible Assets**

The company currently owns 11 stores. Besides, it has a factory in Czech Republic and another in Streur, Denmark, where its headquarters and museum stand. This caption was kept constant considering assumed allocations of stores and factory weight. In the long run, it is a percentage of product sales.

Plant and Machinery were considered growing with production costs. Other equipment was computed as an average of past four years percentage of sales. Finally, rights of use assets value grow with sales and is adjusted to changes in lease liabilities until these are paid off.

**Intangible Assets**

Completed Development Projects were estimated based on growth in total existing products. This caption includes both predicted software and product. Additionally, it was assumed that B&O ceases 2 products every 2 years due to discontinuation. Development projects in progress forecast used growth in "Development Costs". Acquired rights and software are predicted based on product revenue growth. It is believed that its book value varies with sales that can be extrapolated from current asset and further related improvements/acquisitions.

Source: Bang & Olufsen

Location	Stores
Denmark	2
United Kingdom	3
France (Paris)	1
USA (New York)	2
Hong Kong	3

Figure 63 Company-Owned Stores

**Activity Ratios**

To calculate future activity ratios, past historical data (2015-2019) was used as the pandemic affected the supply of components, impacting delivery times and paying capacities. Here, industry performance was also taken into consideration. In the payable period, the company has performed above average of the industry, which has had [78;119] days average. About their holding, there is still room for improvement as the industry has had [76;97] average in the last years. Regarding the collection period, the industry average has been placed between [59;74] days. The company averages above in both, which should be as low as possible.

Having this in mind, it was assumed that the company reduced both ratios, holding and collection, in the long run to 84 days and 80 days, respectively. As per the payable period, it is aimed as high as possible, and it was assumed that the company will be able to stabilize it at 135 days in the long run. All in all, a CCC of 29 days in the long run was forecasted, which is a good result for a company like B&O if we consider its past data (since 2014, their CCC was lower than 46 for 3 years: in 2017, 2018 and 2021, during the pandemic it worsened but the company is expected to keep improving in this area).

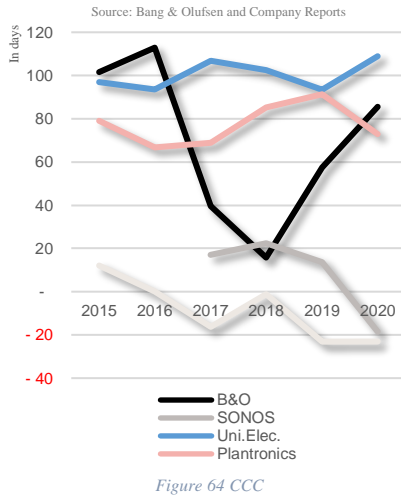


Figure 64 CCC

**Goodwill**

The company has not recently engaged in any M&A transactions as its goodwill has been relatively constant for the past 5 years. It is not forecasted to engage in this type of transactions over the next years as it also entails a degree of risk besides an investment, so the value was kept constant. It is expected that the company rather opts for collaborations to expand and gain awareness. It recently partnered with X-BOX to enter the gaming segment.

**Financial**

Lease Liabilities present value grows with sales as part of it comes from stores revenue. Then, it is reduced for lease payments made and ends up being increased to reflect the accretion of interest. Future repayments were handled based on the first and only available repayment percentage of previously reported lease liability (26%). To get the value adjusted to interest expenses the average incremental borrowing rate of 4.9% reported on May 2021 was adopted. Concerning Mortgage Loans, these are paid equally every year, DKK 4M until its value is paid in full. Finally, Bank Loans represent repo-transactions used to assure financial flexibility on an intra-day basis. Therefore, the group lends bonds to the bank in exchange for cash while agreeing on a reverse operation at a prearranged date. Assuming the company will behave similarly as it did, we forecasted this caption as the same percentage of cash available depicted in 2021 (4.38%). This

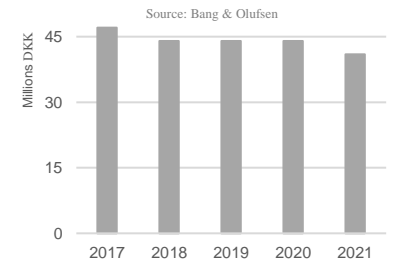


Figure 65 Goodwill Evolution

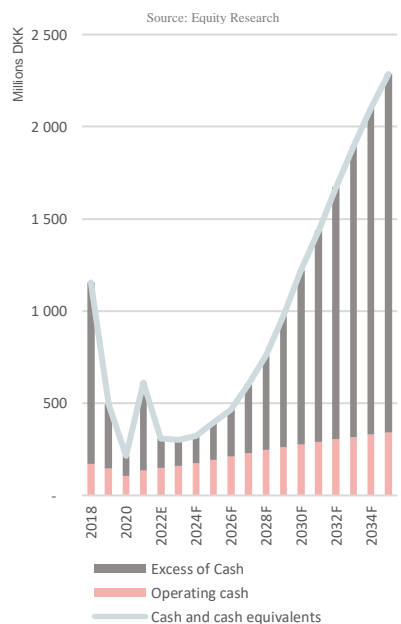


Figure 66 Forecasted Cash Position

result was obtained by subtracting invested capital from equity and adding up other types of debt.

Regarding B&O’s cash position, the company will most likely stand true to its conservative policy due to previously mentioned uncertainty and performance reasons. Nevertheless, few adjustments were made to the forecast of this caption as invested capital always felt below the book value of equity and so, net debt was more and more negative as the company evolved through the projections. Yearly operating cash is set to a constant 5.2% of sales in the future, as explained in the “Capital Structure” section. Afterwards, excess of cash was estimated through **F1** where “ExC” standing for Excess Cash, “Eq” standing for equity, M.L mortgage liabilities, “L.L” lease liabilities “B.L” for Bank loans and “OpC” operating cash.

$$F1: ExC = Eq - InvCap + M.L + B.L + L.L - OpC$$

**Equity**

Shareholders’ equity was computed for forecasted periods as the sum of previous year’s Equity with shareholders’ transactions and total comprehensive income.

Related with B&O’s strategy, its result only starts rising after the company imposed both the cost reduction programme and organizational milestones. This happens in between the Built Robustness phase as B&O moves to an expansionary phase.

As stated by B&O, “It is the intention of the Board of Directors to resume dividend payments as soon as the financial results can justify it”. In full harmony with the statement, dividends should only be distributed once conditions are gathered. These being: enough excess of funds to support the outgoing strategy and a strong cash position above the minimum stated threshold of DKK 500 M. Therefore, it was assumed that in 2027 the company would feel confident enough to engage in such transactions. At that time, B&O will be reaching the end of the 1st phase where operational potential is supposed to materialize and it should have an even stronger cash position of around DKK 605 M, 105 M above the threshold.

The payout ratio was inputted. During the end of the 1<sup>st</sup> stage, from 2028 until 2030, the company’s ambitions should be on delivering a percentage like the industry average from 2015 until 2020, which, according to Ready Ratios, rounds [20%;25%]. Justifications for this could be its long-lasting promise to investors regarding dividends and the ambition to increase stock attractiveness. Moving forward, we have assumed that, during the 2<sup>nd</sup> stage of the strategy, it might reach a payout of [40%;60%].

Reaching higher values does not make sense from both sector and company point of view. Being in a cyclical industry, where results are vulnerable to macroeconomic fluctuations, B&O should keep an eye on its cash position.

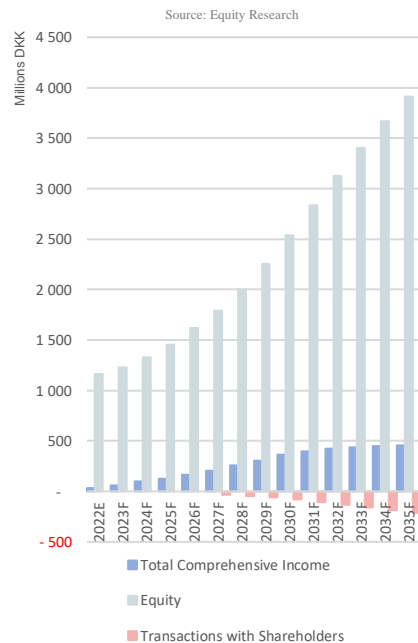


Figure 67 Shareholder's Equity evolution

Secondly, it is important to keep up with competition as new tech trends emerge, forcing part of the earnings to be kept aside for growth.

**VALUATION**  
**DCF & WACC**

The Discounted Cash-Flow is a valuation method based on expected future cash-flows forecasted according to drivers chosen and discounted with the calculated WACC. The forecasted period ending in 2035 allowed a broad view of the evolution of the company over the next 13 years.

**WACC calculation**

The discount factor for FCF must represent the risk faced by investors and, thus, the return demanded by both equity and debtholders (Corporate Valuation (Berk & DeMarzo, 2020)). Generally speaking, this weighted average costs of capital already incorporates the benefit of interest tax shields. By using the same rate to discount all future cash flows it is assumed that the company’s capital structure is to be kept constant under a target Net Debt-Equity ratio. This assumption was made through the analysis of B&O’s historical data, where an upward trend of this ratio leans to a value between [-20%; -10%] and evolution of investors trust to allow for further debt activities to source growth.

**Market Values**

Both equity and debt market values were needed to compute WACC and Unlevered Beta ( $\beta_u$ ). Together, they provide, not only the enterprise value, but the Net Debt-Enterprise ratio and the Equity-Enterprise. Equity market values were estimated by multiplying the share price by the number of shares outstanding. Book Value of debt was used as a good proxy to market value since most of the debt was not issued long time ago and financial markets have been fairly stable.

**Target Net Debt-Equity**

It was presumed the company adopted a policy of keeping its Debt-to-Equity ratio constant at -10% which is precisely the ratio extrapolated when dividing the past 7 years average of Net Debt-Enterprise Value (-11%) by the past 7 years average of Equity-Enterprise Value (111%). This is perceived to be a good value. First, because it was close to the latest pre-covid ratios of 2019, representing the last “normal” year under the cash and capital policy implemented in 2015. Secondly, because as the strategy starts to pay off, investors’ confidence on the management team is expected to increase and so it might slightly increase its debt activities to allow for further expansion. However, we did not predict a value higher than -10% to respect the imposed strong cash position.

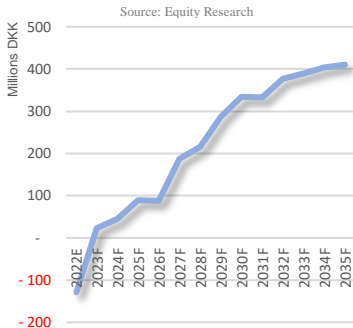


Figure 68 Evolution of Core FCF

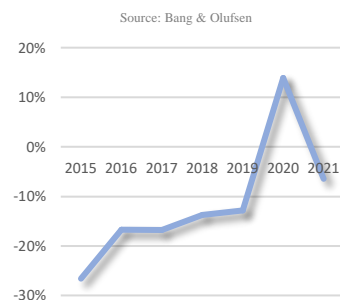


Figure 69 MV Net Debt/MV Equity

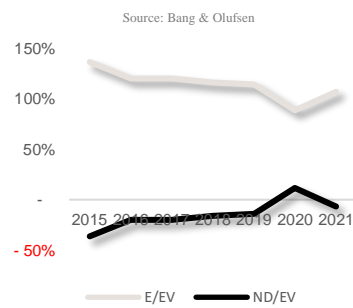


Figure 70 Evolution of EV ratios

For smaller and riskier firms

greater than	≤ to	Rating is	Spread is
12.5	100000	Aaa/AAA	0.69%
9.5	12.499999	Aa2/AA	0.85%
7.5	9.499999	A1/A+	1.07%
6	7.499999	A2/A	1.18%
4.5	5.999999	A3/A-	1.33%
4	4.499999	Baa2/BBB	1.71%
3.5	3.999999	Ba1/BB+	2.31%
3	3.499999	Ba2/BB	2.77%
2.5	2.999999	B1/B+	4.05%
2	2.499999	B2/B	4.86%
1.5	1.999999	B3/B-	5.94%
1.25	1.499999	Caa/CCC	9.46%
0.8	1.249999	Ca2/CC	9.97%
0.5	0.799999	C2/C	13.09%
-100000	0.499999	D2/D	17.44%

Figure 71 Moody's Synthetic Credit Ratings

### Cost of Debt

Return on Debt was computed through the synthetical credit rating method. Here, the company's yearly coverage ratio was assembled to the respective rating extracted from Moody's to get the default spread. Then, the Danish annual risk-free rate of 0.4% was added, represented by its 10-year government bonds, to get the yearly cost of debt. For WACC purposes a cost of debt of 1.5% is anticipated, which is precisely 2021's metric in that regard. This value is around 1pp above the risk-free rate due to B&O's opportunity cost of holding significant amounts of cash instead of using it for further development.

### Cost of Equity

Beta of Equity used the Linest function, in which B&O's monthly stock price variation was inputted against the Eurostoxx Index changes. Since SONOS only became public in 2018 and Betas vary constantly, the past 3 years data were used for the previously mentioned calculation. To un-lever the beta **F2** was used.

$$F2: \beta_u = \frac{ND}{EV} \times \beta_d + \frac{E}{EV} \times \beta_e$$

$$F3: r_u = r_f + \beta_u \times MRP$$

The final beta unlevered of 1.4 was computed as the metric's average values of B&O and a sample of close peers (SONOS, TCL electronics, Universal electronics, and Plantronics). To get unlevered Betas we have used F2 with some assumption embedded. Operating cash was set as 5.2% of sales for each competitor and Beta of debt was set to 0 as most have negative or close to negative net debt.

Given the 2021 Denmark Market Risk Premium of 5.8% extracted from IESE Business School study (Survey: MRP and Risk-Free Rate used for 88 countries in 2021, 2021) and the annual interest on 10 Year Danish Government Bonds of 0.4%, an unlevered return of 8.7% was computed by using **F3**. Re-levering this value with **F4** led to a return of equity equal to 8%.

$$F4: r_e = r_u + \frac{ND}{E} \times (r_u - r_d)$$

Source: Equity Research

ND / EV	-10.9%
E / EV	110.9%
D/E	-9.8%
Re	8.0%
Rd	1.5%
t	30.2%

Figure 72 WACC inputs

### Weighted Average Cost of Capital

With all information available in this section and shortly presented in figure 72, **F5** was used to reach B&O's Weighted Average Cost of Capital of 8.75%. At its basis, this WACC means that, for every DKK investors trust to B&O, the audio electronics company must pay back 0.0875 DKK under the specific period.

Before concluding the accuracy of the computed WACC, a benchmark study was made. For it, three categories of WACCs were created regarding (i) B&O's Linest function, (ii) Market Average  $\beta_u$ , (iii) Market sentiment and (iv) different capital structure.

In the first set, merely B&O's returns, and the Eurostoxx Index were used to reach levered and, consequently, unlevered betas. This approach relies on current ratios of both Net Debt and Equity ratios to Enterprise Value.

$$F5: WACC = \frac{ND}{EV} \times r_d \times (1 - t) + \frac{E}{EV} \times r_e$$

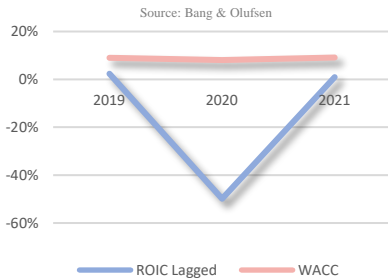


Figure 73 Comparison Past ROIC vs WACC

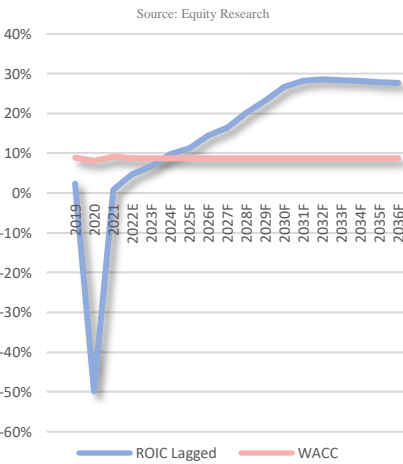


Figure 74 Comparison Forecasted ROIC vs WACC

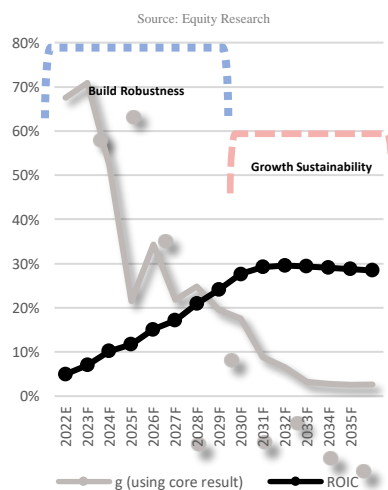


Figure 75 ROIC and Growth rate evolution

Source: OECD – Long Term Forecast

Growth rate Benchmark	
LONG TERM WORLD GDP GROWTH	2.5%
LONG TERM INFLATION RATE DKK	2.0%
BENCHMARK GROWTH	4.6%

Figure 76 Long Term Developments

Concerning market average  $\beta_u$  WACC type, the mentioned sample of peers was used to reach an average value of unlevered beta for each given year. Here, the assumed Enterprise Value ratios were inputted and equal to the used WACC.

Finally, a market sentiment WACC of 8.9% was extracted from Equity betas available in Bloomberg, Yahoo Finance and Reuters. It was then feasible to compute each unlevered beta and thus the average  $\beta_u$  of the sample market. Having in mind WACC values presented in Figure 78, we concluded that a value of 8.75% was reasonable enough to move forward.

Additionally, a study made by KPMG in 2020 concludes that the technology sector has a benchmark WACC of 7.7% due to the industry characteristics mentioned above (political risks and innovation shifts). Under the premise of B&O being a medium cap company that operates under a niche market of high-priced products, it is believed this theoretical medium-high WACC of 8.75% represents a trustworthy representation of investors compensation for this niche risk they take.

As stated in Investopedia, “WACC can be used as a hurdle rate against which to assess ROIC performance” (McClure, 2021). Past data regarding these two indicators show that the Danish company has been shedding value. Therefore, it has been perceived as an unfavourable investment, especially during the Covid business environment, in which it reached a Lagged ROIC of -50%. Given our forecasted assumptions and the company strategy in hand, we predict it will reach a breakeven in 2024. Prior to that, the company will still be trying to mitigate the Covid-related business implications while at the same time starting to exploit its presence in core markets. From then onwards, the Built Robustness phase starts to bear fruits and, consequently, for every DKK invested into capital, B&O will be creating value equal to the difference between ROIC lagged and the WACC of 8.75%.

### Growth Analysis

Regarding growth, it mostly relies on core operations. B&O’s turnaround strategy potential will likely imply growth rates distinctive from regional or global GDP growth rates. During Build Robustness growth rates are expected to be positive [20%;70%] but volatile as the company thrives to adapt its business to the paradigm post COVID-19 and to its management team’s vision. In the Growth Sustainability phase, after the expansionary phase, core result is still expected to increase but at an inferior growth rate. In the following years, as most drivers start to stabilize, growth will gradually decrease until it reaches 2.6% in 2035, the rate assumed for following years.

Considering ROIC, according to the Wall Street Journal, SONOS's rounds 33%. Bigger peers such as Apple's rounds 53% and Sony's 20% (according to MarketWatch), while B&O's stabilized ROIC in the future is 29% meaning the company seems to be relatively within the parameters. This value is above the WACC as it is believed that the company will be able to continue exploiting its competitive advantages.

**Valuation under WACC**

After computing B&O's WACC, the perpetuity value of Free Cash Flows was computed. As mentioned, 2035 was used as the SS<sup>16</sup> year as it is forecasted that Growth Sustainability ends in that year. Besides, both growth and ROIC have stabilized by then under the model's assumptions, Figure 101.

Using the WACC of 8.75%, growth of 2.56% calculated by the model, 2034 core free cash flow of DKK 404 M. The perpetual growth relies on the assumption that B&O keeps successfully exploiting its competitive advantages, mentioned above.

After, we arrived at a core value of DKK 3 781M. The Non-Core captions were evaluated as book value and added (goodwill, assets held for sale and tax loss carryforwards) or subtracted (Pensions) to Core Value as non-cash adjustments.

The Enterprise Value was then DKK 3 851M. Adding the 2022 value of Net Financial Debt (DKK -124M), we obtain the Equity Value of B&O of DKK 3 974M. Assuming a constant number of outstanding shares, 120.659.715, a 2022 forecasted price of DKK 34.6 was achieved.

**SENSITIVITY ANALYSIS**

To analyse the sensitivity of the share price different WACC and terminal growths were used as shifting variables, as these are two volatile values in the model. Highlighted in red, one can observe the computed share price of DKK 34.6.

As already mentioned, WACC was benchmarked against four methodical categories: (i) B&O financial Data, (ii) Market Average unlevered Beta, (iii) Market sentiment and (iv) different capital structure. Regarding the first, we find 8.08% reported in 2020 and 9.14% reported in 2021. In (ii), both the 2019 value of 9.31% and the 8.75% reported in 2021 were included. Additionally, 2021 values of 8.50% and 8.90% were extracted from Carnegie analyst and financial platforms data about B&O, respectively. Finally, a WACC of 8.97% was included regarding a capital structure with higher Net Debt to enterprise value.<sup>17</sup>

Source: Equity Research

WACC	8.75%
TV period	12
TV1	
Investment (IR)	404
FCF	6526
DCF(WACC)	2361
Core Value	3 781
Non-Core Adjustments	70
EV	3 851
Net Financial Debt	-124
Equity	3 974

Figure 77 Valuation Summary

DKK Source: Equity Research

		g					
		2.00%	2.30%	2.56%	2.57%	2.79%	4.04%
WACC	8.00%	37.6	38.8	40.0	40.0	41.1	49.6
	8.08%	37.0	38.2	39.3	39.4	40.4	48.5
	8.50%	34.3	35.3	36.2	36.2	37.1	43.6
	8.75%	32.9	33.7	34.6	34.6	35.4	41.1
	8.90%	32.0	32.9	33.7	33.7	34.4	39.8
	8.97%	31.7	32.5	33.3	33.3	34.0	39.1
	9.14%	30.8	31.5	32.2	32.3	32.9	37.7
	9.31%	30.0	30.7	31.3	31.3	32.0	36.4
	9.50%	29.1	29.7	30.4	30.4	30.9	35.0

Figure 78 Sensitivity Analysis

<sup>16</sup> SS – Steady State

<sup>17</sup> Two other values ( 8% and 9.5%) were included to close the interval of possible values

For the terminal growth as a comparison, values extracted from three approaches were used. The first one being the one given by analysts (Carnegie and ABG) computed perpetual growths under the WACC method, the 2% and 2.3%, respectively. Additionally, hypothesis on different steady states were included. The value of 2.57% for 2036 (later) and the value of 2.79% for 2034 (sooner) can be observed. Lastly, the sales growth rate reported in 2034 by our model, 4.04%.

As expected and logical, the company is more sensitive to edgier values of both rates. Given the FCF map and the ranges of input values presented in figure 37, B&O's share price can vary from DKK 29.1 to DKK 49.6.

**MULTIPLES**

Multiple Valuation allows to spot how a company behaves compared to its peers. The P/Earnings doesn't apply in this case since B&O's ratio is unstable and often negative. EV/EBIT didn't fit as well as all peers presented values significantly different from B&O's case, especially because the Danes represent a turnaround case.

We relied on EV/EBITDA, EV/SALES, P/SALES and B&O's 2022 forecasted data. The first two are not influenced by the company's capital structure, being less affected by accounting differences and more industry specific. EV/EBITDA seems accurate as this multiple is typically used in companies where fixed assets are less important and, thus, have low Depreciation and Amortization. EV/SALES was also studied as the company is slowly reaching profitability. P/SALES allows to account for possible mis valuations regarding the turnaround strategy.

Two groups were considered<sup>18</sup>. About the first, this selection resembles peers that are part of the CE industry, selling similar products, whose betas are generally above 1 and that have strong cash positions like B&O. As not all companies are equal, some outliers were not considered depending on the multiple being valued. Here, SONOS was distinguished as the most relevant peer, deserving an exclusive multiple analysis. For the second group, mature companies were analysed given that, in case B&O successfully completes its strategy, it will probably achieve similar ratios. Like SONOS before, Sony was given extra importance.

Given the results obtained, focusing on EV/SALES and P/SALES, there is clear indication that the stock, as of today, is undervalued. Most resemble a BUY position (those whose price > 28.45, a 10% price increase), considering the share price drop since November 2021.

Source: Equity Research

Multiple used	Share Price
EV/SALES	34
EV/EBITDA	21
P/SALES	26

Figure 79 Group 1 Multiples

Source: Equity Research

Multiple used	Share Price
EV/SALES	47
EV/EBITDA	28
P/SALES	53

Figure 80 SONOS Multiples

Source: Equity Research

Multiple used	Share Price
EV/SALES	42
EV/EBITDA	39
P/SALES	46

Figure 81 Group 2 Multiples

Source: Equity Research

Multiple used	Share Price
EV/SALES	42
EV/EBITDA	23
P/SALES	46

Figure 82 Sony Margin

<sup>18</sup> Group 1 – SONOS, TCL Electronics, Universal Electronics and Plantronics // Group 2 – Apple and Sony

Source: Equity Research

DKK	Base Case	34.59
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Figure 83 Estimated Share Price

Source: Equity Research

DKK	Americas	Asia	Share Price
# of Stores	+	-	25.08
	+	+	37.05
	-	+	35.94
	-	-	33.07

Figure 84 Scenario Analysis Revenues

Source: Equity Research

DKK	Movement	Share Price
OTG	↑	37.20
	↑↑	27.53
Staged	↓	32.03

Figure 86 Scenario Analysis Margins

Source: Equity Research

DKK	Marketing	Development	Share Price
	↓	↑	48.17

Figure 85 Scenario Analysis Costs

Source: Equity Research

DKK	Omicron	33.27
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Figure 88 Scenario Bad COVID Year

Source: Bang & Olufsen

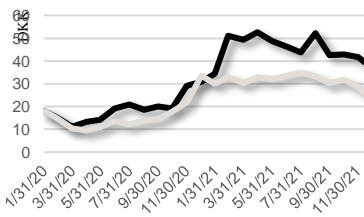


Figure 87 B&O's Share Price vs SONOS (rebased)

Source: SONOS and Bang & Olufsen

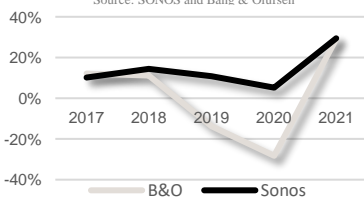


Figure 89 Revenue Growth

SCENARIO ANALYSIS

As the company might end up not following or accomplishing its original strategy, different Scenarios were considered regarding the expected base forecast.

B&O's geographically strategy might follow another path. Since the company is already established in EMEA, variations in the other two regions were considered. It is clear to see that Asia is crucial, since in both scenarios where the company does not expand with stores in this region, the estimated price decreases. On the other hand, Americas store availability has little influence in the share price since most of it relates to Multibrand lower ARPS.

As the On-the-Go resembles undesirable volatiles, two scenarios were studied. One where margins are higher than forecasted, which, results in a higher price (+8%). The other assesses the case where margins stay volatile over Build Robustness, negatively affecting the price (-20%). The Staged category is the one with lower brand awareness, it remains interesting to evaluate the scenario where the forecasted awareness through marketing and partnering is not fully achieved. This case resulted in a lower share price of DKK 32 (-7%).

About costs, B&O might opt to spend more in development, with more products rather than Marketing. This positively affects the price, rising 39%. Nevertheless, it is not expected as Branding is crucial for the awareness B&O wants to achieve.

Also, a scenario about a difficult 2022 due to possible evolution of Omicron. Here, B&O would probably decrease the stores it works with in Asia and Americas, decrease its margins, launch less products, employ less people and be subject to higher costs. This would have a negative impact. Still, countries have gained the ability to foresee COVID (e.g., vaccination) and anticipate chaos with restrictions.

B&O VS SONOS

Remarkably, both analysts and B&O expressed investors cautionary interest to know how the Danes perform against the Americans. For the following appraisals, data of the last 5 years was used as SONOS only recently had its IPO.

Concerning B&O, even though its share price was DKK 25.9 by December 2021, its predicted price in December 2022 is of DKK 34.6. About SONOS, it had a November share price equalling 32\$. Analyst consensus extracted from WSJ<sup>19</sup> and CNN depict an increase to around 48\$ until the end of 2022.

**SALES: B&O.** Centred over a comparison of historical Data as shown in Figure 88, we can see B&O has been weaker in terms of revenue growth. Although both

<sup>19</sup> WSJ – Wall Street Journal

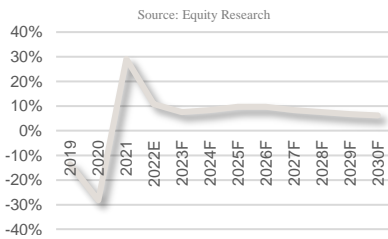


Figure 90 Revenue Growth B&O

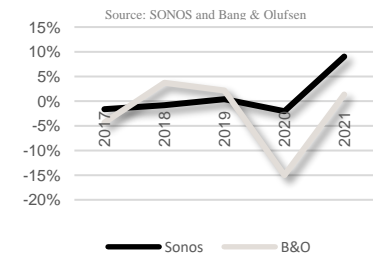


Figure 91 EBIT Margins

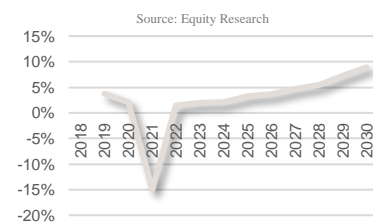


Figure 92 EBIT Margin before Special Items

Source: SONOS and Bang & Olufsen

	2019	2020	2021
SONOS (A.P)	42%	43%	47%
B&O (FL&OTG)	39%	26%	32%
F.L	51%	47%	48%
OTG	35%	16%	21%

Figure 93 Product Margins

Source: SONOS and Bang & Olufsen

days	2017	2018	2019	2020	2021
SONOS	17	22	14	19	9
B&O	39	16	57	86	46

Figure 94 CCC

enterprises have shown the same significant 29% revenue growth from 2020 to 2021, one should bear in mind B&O's remarkable recovery from 2020. Together with ABG Sundal Collier, B&O is expected to increase and stabilize its revenue growth as the strategy is applied. For instance, a sales growth of [5%;9%] during the 1st stage was predicted. This is conservative as it considers B&O's exceptional demand for CE during COVID-19. Therefore, growths like 2021 are unlikely to occur as vaccines roll-out enable consumers to spend their money otherwise (e.g., travelling). Regarding SONOS, their growth is expected to be slightly lower, [4%;8%] accordingly to ABG analyst, as it will focus in a fragmented and competitive market. Like B&O, it is expected to suffer from this income effect post COVID, which shall affect sales.

**EBIT MARGIN: SONOS.** Regarding EBIT margins before special items and looking at B&O's data, volatile margins are observed [F.90]. Nevertheless, there is confidence this will quickly become something of the past as new Management focuses on a more efficient operational system. In fact, part of this argument can be observed in 2021 as the margin increased from -15% to 1%. Going forward, in Build Robustness, EBIT margin will increase to a value of 8.8% in 2030. Observing SONOS, after discussing with analysts we expect it to have a slightly better EBIT margin, partially explained due to its successful cost organization already shown. Their margin is prone to reach superior values of [5%;8%], earlier than B&O.

**PRODUCT MARGIN: AMBIGUOUS.** As SONOS does not offer staged-like category products, means of comparison should be drawn between its audio products and B&O's flexible living and on-the-go. On a broader level, one is tempted to think SONOS is performing better. However, considering Dane's ambitions to increase and tighten the on-the-go margin fluctuations, the case shifts. Additionally, it is important to mention the effectiveness of the flexible living category, with margins consistently above SONOS. In fact, this category resembles a significant part of B&O's revenue and is expected to serve as a benchmark to other segment margin. Going forward, we expect both to achieve margins of around [45%;55%].

**CCC: SONOS.** SONOS's remarkable operational efficiency result in healthy CCCs 5-year average of 9 days. Curiously, its main driver, collection period, resembles the opposite regarding B&O's with an average of 81 days, 14 above the sample peers average. Going forward, we do expect improvements, recognizing it takes time to close the gap. Consequently, being SONOS the best out of the sample, it will most likely perform above B&O's projected 2030 value of 29 conversion days.

**STRATEGIC: B&O.** Although we believe in SONOS’s strategy suitability, more hope is given to B&O. It has shown encouraging signs of an irreversible turnaround. Large part of SONOS’s revenue comes from Americas. We do hold a sceptical view regarding high-end luxury suitability to the American market. Despite the loyal customer base, modest relative growth is expected. Like B&O, the company has the ambition to expand its horizons to the Asiatic region. Yet, its low revenue percentage, either resembles lack of priority or slow regional bond. About data availability, we believe SONOS is better positioned. As customers cannot use products without their app connectivity, benefiting from a closed-off data ecosystem. Although B&O aims to build data capacity, narrowing the gap, it faces barriers. These include the need to promote the apps and the tracking of older products as it is a company with a long past.

**DECISION.** First, it is important to acknowledge both companies’ potential, their sizes and distinctive cycles. We expect them to move accordingly to the sector. Although B&O is our nominee with higher predicted sales growth and strategy direction, conclusions may change considering investor’s profile. The argument being that SONOS’s size, better operational efficient and moderate growth pinpoint to a more risk averse investment. Here, concerns about recent data on its juridical battle against Google arise. While recognizing this might affect SONOS either way, one may think it merely symbolizes its last breath to keep competitive.

**FINAL RECOMMENDATION**

B&O’s share price has been dropping since the 19<sup>th</sup> of November (DKK 32.98) having achieved a lower value on the 14<sup>th</sup> of December (DKK 26.40). One explanation of such could be the spreading of Omicron variant, which affected the investors’ sentiment. Denmark’s first infection was detected in November and since then, while cases have been rising, B&O’s share price has been falling. Being the second most affected European region, Danish based stock prices have shown significant negative movements across different industries.

Nonetheless, CE industry is expected to grow due to digitalization and smart technologies. As B&O’s strategy is expected to consolidate its position in target markets, performance improvements are expected within its niche.

To give a proper conclusion about the position to take two valuation methods were performed: Discounted Cash-Flows using WACC and Multiples. DCF was chosen due to its ability to better detail the strategic expectations, allowing for better intrinsic evaluation of the business. As of 16th December 2021, the company’s share price was equal to DKK 25.9. Following the valuation methodology used, the share price as of December 2022 is estimated to be DKK 34.6. This represents a

Source: Google Finance

Country	Sector	Company	Variation 1M
France	Luxury Goods	LVMH	-2.30%
Japan	CE	Sony	-2.45%
USA	CE	Plantronics	-3.25%
France	Luxury Goods	Christian Dior SE	-4.03%
Italy	Luxury Goods	Moncler	-7.65%
China	CE	TCL Electronics	-8.23%
UK	Luxury Goods	Burberry	-10.00%
Denmark	Jewellery	Pandora	-13.37%
USA	CE	SONOS	-14.89%
Denmark	Software	ChecoMetec	-27.64%
Denmark	Cell Analysis	cBrain	-31.20%

Date	Event	Share Price	Variation
27/02/2020	1st COVID Case	14.9	-37%
27/03/2021	1 month later	9.4	
22/11/2021	1st Omicron Case	32.8	
14/12/2021	1 month later	26.4	-20%

Figure 97 Pandemic Outbreak impact on B&O

Source: Equity Research

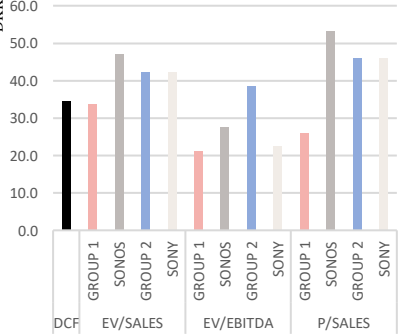


Figure 96 Share Price

capital gain and expected total return of 34% (no dividend is expected) and thus it is believed the market is undervaluing B&O.

If one considers the analysis made together with the current pandemic circumstances, it is believed that investors should take a BUY position on B&O's stock. It is expected to keep following the organic growth path it has paved until now rather than M&A activities. Nonetheless, the market seems to be undervaluing the company's turnaround strategy and its ability to reach milestones even in uncertainty times. We believe this sentiment is based on past strategic failures that resulted in volatile returns and B&O's behaviour after the 1st COVID outbreak.

Nevertheless, the new management team, which is more oriented to a scalable operational phase, seems to be up to the challenge ahead. In that regard, some key considerations are the new sell out data performance system, the rebranded social media approach, and the hiring of talented personnel to back up the development of products.

APPENDIX

(in millions DKK)	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	
<b>CORE OPERATIONS</b>																					
EMEA	1 737	1 459	1 020	1 295	1 357	1 402	1 447	1 534	1 650	1 760	1 870	1 978	2 082	2 160	2 240	2 324	2 410	2 498	2 599	2 683	
Americas	302	223	141	190	200	209	218	225	230	235	240	247	256	268	280	293	306	319	333	348	
Asia	1 008	927	628	878	964	1 023	1 136	1 266	1 419	1 547	1 694	1 844	1 976	2 106	2 230	2 348	2 471	2 597	2 727	2 842	
<b>Total Product Sales</b>	<b>3 047</b>	<b>2 609</b>	<b>1 789</b>	<b>2 363</b>	<b>2 521</b>	<b>2 634</b>	<b>2 801</b>	<b>3 025</b>	<b>3 299</b>	<b>3 542</b>	<b>3 804</b>	<b>4 069</b>	<b>4 314</b>	<b>4 533</b>	<b>4 750</b>	<b>4 964</b>	<b>5 186</b>	<b>5 414</b>	<b>5 649</b>	<b>5 873</b>	
Brand Partnering & Other Activities	238	229	247	266	389	492	589	689	779	868	943	992	1 043	1 073	1 100	1 127	1 152	1 175	1 196	1 215	
<b>Total Core Revenues</b>	<b>3 285</b>	<b>2 838</b>	<b>2 036</b>	<b>2 629</b>	<b>2 911</b>	<b>3 126</b>	<b>3 390</b>	<b>3 714</b>	<b>4 079</b>	<b>4 410</b>	<b>4 747</b>	<b>5 061</b>	<b>5 358</b>	<b>5 606</b>	<b>5 851</b>	<b>6 091</b>	<b>6 338</b>	<b>6 589</b>	<b>6 845</b>	<b>7 088</b>	
Growth	-	-14%	-28%	29%	10.7%	7.4%	8.4%	9.6%	9.8%	8.1%	7.5%	6.6%	5.9%	4.6%	4.4%	4.1%	4.0%	3.9%	3.5%	3.5%	
<b>Production Costs (with Aluminium Price Changes)</b>	<b>1 852</b>	<b>1 461</b>	<b>1 198</b>	<b>1 490</b>	<b>1 670</b>	<b>1 702</b>	<b>1 779</b>	<b>1 922</b>	<b>2 084</b>	<b>2 215</b>	<b>2 369</b>	<b>2 499</b>	<b>2 611</b>	<b>2 711</b>	<b>2 813</b>	<b>2 926</b>	<b>3 042</b>	<b>3 160</b>	<b>3 284</b>	<b>3 400</b>	
Distribution and Marketing costs	542	605	445	377	407	531	617	721	832	944	1 049	1 154	1 259	1 345	1 433	1 523	1 616	1 713	1 814	1 914	
Administration costs	53	47	21	24	31	31	32	33	34	34	35	35	35	36	36	36	37	37	37	38	
<b>SG&amp;A</b>	<b>595</b>	<b>652</b>	<b>466</b>	<b>401</b>	<b>438</b>	<b>563</b>	<b>649</b>	<b>753</b>	<b>866</b>	<b>978</b>	<b>1 084</b>	<b>1 189</b>	<b>1 294</b>	<b>1 381</b>	<b>1 469</b>	<b>1 559</b>	<b>1 653</b>	<b>1 750</b>	<b>1 851</b>	<b>1 952</b>	
Staff Costs	443	479	501	549	512	541	571	600	628	651	671	687	703	717	730	743	756	770	784	798	
Development Costs	55	52	15	9	17	22	30	25	33	25	22	17	14	14	14	14	14	14	8	8	
Depreciation	55	43	82	91	93	88	85	85	85	85	85	86	86	86	93	94	97	99	101	104	
Amortization	220	137	118	90	133	126	143	167	163	189	180	181	176	174	180	184	189	193	198	190	
Impairment	-	10	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Depreciation, Amortization and Impairment</b>	<b>236</b>	<b>159</b>	<b>161</b>	<b>146</b>	<b>226</b>	<b>214</b>	<b>228</b>	<b>251</b>	<b>249</b>	<b>274</b>	<b>265</b>	<b>266</b>	<b>262</b>	<b>267</b>	<b>274</b>	<b>280</b>	<b>287</b>	<b>294</b>	<b>303</b>	<b>298</b>	
<b>Total Core Costs</b>	<b>3 180</b>	<b>2 803</b>	<b>2 341</b>	<b>2 595</b>	<b>2 863</b>	<b>3 041</b>	<b>3 258</b>	<b>3 552</b>	<b>3 860</b>	<b>4 142</b>	<b>4 411</b>	<b>4 658</b>	<b>4 884</b>	<b>5 089</b>	<b>5 300</b>	<b>5 522</b>	<b>5 753</b>	<b>5 988</b>	<b>6 229</b>	<b>6 455</b>	
Growth	-	-12%	-16%	11%	10%	6%	7%	9%	9%	7%	7%	6%	5%	4%	4.1%	4.2%	4%	4%	4%	4%	
<b>Other Operating Income</b>	<b>18</b>	<b>24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Core Result Before Taxes</b>	<b>123</b>	<b>59</b>	<b>-305</b>	<b>34</b>	<b>48</b>	<b>85</b>	<b>132</b>	<b>162</b>	<b>219</b>	<b>268</b>	<b>336</b>	<b>403</b>	<b>474</b>	<b>516</b>	<b>551</b>	<b>569</b>	<b>585</b>	<b>600</b>	<b>616</b>	<b>633</b>	
Statutory Taxes	27	13	-67	7	10	19	29	36	48	59	74	89	104	114	121	125	129	132	135	139	
Tax Adjustments	3	7	271	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
<b>Core Result</b>	<b>92</b>	<b>39</b>	<b>-509</b>	<b>25</b>	<b>41</b>	<b>71</b>	<b>107</b>	<b>130</b>	<b>175</b>	<b>213</b>	<b>266</b>	<b>318</b>	<b>374</b>	<b>407</b>	<b>434</b>	<b>448</b>	<b>461</b>	<b>472</b>	<b>485</b>	<b>498</b>	
<b>NON CORE OPERATIONS</b>																					
Special Items	-	-	42	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<small>*SI relate to Consultancy and Redundancy Costs. Mainly expenses to restructuring or structural changes.</small>																					
<b>Non Core Result Before Taxes</b>	<b>-</b>	<b>-</b>	<b>-42</b>	<b>-15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Statutory Taxes	7	-1	-9	-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tax Adjustments	40	-18	-11	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OCI Conse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Non Core Result</b>	<b>33</b>	<b>-17</b>	<b>-62</b>	<b>-16</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Net Result</b>	<b>125</b>	<b>21</b>	<b>-571</b>	<b>9</b>	<b>41</b>	<b>71</b>	<b>107</b>	<b>130</b>	<b>175</b>	<b>213</b>	<b>266</b>	<b>318</b>	<b>374</b>	<b>407</b>	<b>434</b>	<b>448</b>	<b>461</b>	<b>472</b>	<b>485</b>	<b>498</b>	
<b>FINANCIAL</b>																					
Interest Income from banks	2	4	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income from subleases	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest expense to banks	-4	-21	-11	-16	-14	-13	-12	-12	-11	-11	-12	-12	-13	-14	-15	-16	-17	-18	-19	-20	-20
Interest expense from lease liabilities	-	-	-10	-7	-6	-5	-4	-4	-3	-3	-3	-2	-2	-2	-1	-1	-1	-1	-1	-1	-1
<b>Financial Income (expenses) from banks &amp; subsidiaries</b>	<b>-2</b>	<b>-17</b>	<b>-14</b>	<b>-17</b>	<b>-21</b>	<b>-18</b>	<b>-17</b>	<b>-16</b>	<b>-15</b>	<b>-15</b>	<b>-15</b>	<b>-15</b>	<b>-15</b>	<b>-16</b>	<b>-17</b>	<b>-18</b>	<b>-18</b>	<b>-19</b>	<b>-20</b>	<b>-20</b>	<b>-20</b>
Other Financial Income (expenses)	-10	-1	-1	-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exchange rate loss (net)	7	-8	-5	-17	8	8	8	7	5	4	1	1	0	0	0	0	0	0	0	0	0
<b>Financial Result Before Taxes</b>	<b>-5</b>	<b>-26</b>	<b>-20</b>	<b>-52</b>	<b>-13</b>	<b>-10</b>	<b>-9</b>	<b>-8</b>	<b>-10</b>	<b>-11</b>	<b>-14</b>	<b>-14</b>	<b>-15</b>	<b>-16</b>	<b>-16</b>	<b>-17</b>	<b>-18</b>	<b>-19</b>	<b>-20</b>	<b>-20</b>	<b>-20</b>
Statutory Taxes	-1	-6	-4	-11	-3	-2	-2	-2	-2	-2	-3	-3	-3	-3	-4	-4	-4	-4	-4	-4	-4
<b>Financial Result</b>	<b>-4</b>	<b>-20</b>	<b>-16</b>	<b>-41</b>	<b>-10</b>	<b>-8</b>	<b>-7</b>	<b>-7</b>	<b>-8</b>	<b>-8</b>	<b>-11</b>	<b>-11</b>	<b>-11</b>	<b>-12</b>	<b>-13</b>	<b>-13</b>	<b>-14</b>	<b>-15</b>	<b>-15</b>	<b>-15</b>	<b>-15</b>
Tax adjustments related with usage of DTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Comprehensive Income</b>	<b>122</b>	<b>1</b>	<b>-587</b>	<b>-32</b>	<b>31</b>	<b>63</b>	<b>100</b>	<b>124</b>	<b>167</b>	<b>205</b>	<b>256</b>	<b>307</b>	<b>363</b>	<b>395</b>	<b>421</b>	<b>435</b>	<b>447</b>	<b>458</b>	<b>469</b>	<b>482</b>	<b>482</b>

Figure 98 Income Statement

(in millions DKK)	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	
<b>CORE</b>																					
Net Sales	3 285	2 838	2 036	2 629	2 911	3 126	3 390	3 714	4 079	4 410	4 747	5 061	5 358	5 606	5 851	6 091	6 338	6 589	6 845	7 088	
Cash and Cash Equivalents	1 155	492	215	613	310	303	324	396	465	605	760	976	1 221	1 438	1 671	1 892	2 100	2 286	2 482	2 695	
<b>Operating Cash</b>	<b>170</b>	<b>147</b>	<b>106</b>	<b>136</b>	<b>151</b>	<b>162</b>	<b>176</b>	<b>193</b>	<b>211</b>	<b>229</b>	<b>246</b>	<b>262</b>	<b>278</b>	<b>291</b>	<b>303</b>	<b>316</b>	<b>329</b>	<b>342</b>	<b>355</b>	<b>368</b>	
Land and Buildings	116	89	83	82	82	82	82	82	82	82	82	82	82	101	106	110	115	119	124	128	
Plant and Machinery	56	57	44	37	41	42	44	48	52	55	59	62	65	67	70	73	76	78	82	85	
Other equipment	5	10	17	13	13	13	14	15	17	18	19	21	22	23	24	25	27	28	29	30	
Right-of-use Assets	-	-	148	120	113	101	93	90	88	85	83	80	78	75	73	71	71	70	71	72	
Tangible assets in course of construction and prepayments for tang	7	9	36	28	22	17	13	10	8	6	5	4	3	2	2	1	-	-	-	-	
Leasehold Improvements	-	2	6	20	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
<b>Tangible Assets</b>	<b>184</b>	<b>167</b>	<b>334</b>	<b>300</b>	<b>281</b>	<b>265</b>	<b>256</b>	<b>255</b>	<b>256</b>	<b>256</b>	<b>257</b>	<b>258</b>	<b>259</b>	<b>279</b>	<b>284</b>	<b>290</b>	<b>297</b>	<b>305</b>	<b>314</b>	<b>324</b>	
Acquired Rights and Software	2	14	23	41	44	46	49	52	57	61	66	71	75	79	82	86	90	94	98	102	
Completed Development Projects	181	116	98	110	114	122	132	141	151	160	167	173	176	181	184	189	192	197	198	201	
Development Projects in Progress	41	54	59	76	58	77	105	86	115	86	77	58	48	48	48	48	48	48	48	29	
<b>Intangible assets</b>	<b>224</b>	<b>184</b>	<b>180</b>	<b>227</b>	<b>215</b>	<b>245</b>	<b>286</b>	<b>280</b>	<b>323</b>	<b>308</b>	<b>309</b>	<b>301</b>	<b>299</b>	<b>308</b>	<b>314</b>	<b>323</b>	<b>330</b>	<b>339</b>	<b>325</b>	<b>321</b>	
Inventories	354	599	460	369	412	420	434	463	497	516	545	575	601	624	647	673	700	727	756	783	
Receivables	688	694	471	621	686	728	771	845	916	979	1 054	1 109	1 174	1 229	1 282	1 335	1 389	1 444	1 500	1 554	
Investment properties	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tax loss Carryforwards	149	149	14	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
Non-Current Assets	44	48	24	30	25	27	30	33	36	38	41	43	45	47	49	51	53	55	57	57	
Other	31	29	11	25	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
Remaining Deferred tax Assets	224	226	49	74	68	70	73	76	79	81	84	86	88	90	92	94	96	98	100	100	
<b>Total Core Assets</b>	<b>1 858</b>	<b>2 017</b>	<b>1 600</b>	<b>1 727</b>	<b>1 813</b>	<b>1 890</b>	<b>1 995</b>	<b>2 111</b>	<b>2 283</b>	<b>2 368</b>	<b>2 495</b>	<b>2 592</b>	<b>2 699</b>	<b>2 819</b>	<b>2 924</b>	<b>3 032</b>	<b>3 141</b>	<b>3 256</b>	<b>3 351</b>	<b>3 449</b>	
Payables	657	717	451	533	600	615	643	700	765	813	870	917	966	1 003	1 040	1 082	1 125	1 169	1 214	1 258	
Deferred Income	154	53	33	19	20	21	23	24	27	28	31	33	35	36	38	40	42	44	45	47	
Deferred tax Liabilities	11	11	10	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Provisions	52	65	91	78	82	88	96	105	115	125	134	143	151	158	165	172	179	186	194	200	
Non-Current	1	11	30	1	12	16	17	12	16	17	17	17	19	19	19	19	19	19	19	19	
Current	133	79	65	255	94	97	101	112	115	115	121	129	135	135	135	135	135	135	135	135	
<b>Other liabilities</b>	<b>134</b>	<b>90</b>	<b>95</b>	<b>256</b>	<b>106</b>	<b>112</b>	<b>118</b>	<b>125</b>	<b>131</b>	<b>138</b>	<b>146</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>154</b>	
<b>Total Core Liabilities</b>	<b>1 008</b>	<b>936</b>	<b>680</b>	<b>893</b>	<b>808</b>	<b>837</b>	<b>880</b>	<b>954</b>	<b>1 038</b>	<b>1 097</b>	<b>1 173</b>	<b>1 239</b>	<b>1 306</b>	<b>1 351</b>	<b>1 398</b>	<b>1 448</b>	<b>1 500</b>	<b>1 553</b>	<b>1 607</b>	<b>1 659</b>	
Invested Capital in Core Business	850	1 081	920	834	1 004	1 053	1 115	1 156	1 244	1 271	1 322	1 353	1 393	1 468	1 526	1 584	1 641	1 703	1 744	1 790	
<b>NON CORE</b>																					
Goodwill	44	44	44	41	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	
Assets held-for-sale	14	36	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
<b>Total Non-Core Assets</b>	<b>58</b>	<b>80</b>	<b>65</b>	<b>62</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	<b>65</b>	
Pensions	14	15	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	
<b>Total Non-Core Liabilities</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	
Invested Capital in Non Core Business	44	65	50	48	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	
<b>Total Invested Capital</b>	<b>894</b>	<b>1 146</b>	<b>970</b>	<b>882</b>	<b>1 055</b>	<b>1 104</b>	<b>1 166</b>	<b>1 207</b>	<b>1 295</b>	<b>1 322</b>	<b>1 373</b>	<b>1 404</b>	<b>1 444</b>	<b>1 519</b>	<b>1 577</b>	<b>1 635</b>	<b>1 692</b>	<b>1 754</b>	<b>1 795</b>	<b>1 841</b>	
<b>FINANCIAL</b>																					
Cash and cash equivalents	1 155	492	215	613	310	303	324	396	465	605	760	976	1 221	1 438	1 671	1 892	2 100	2 286	2 482	2 695	
Operating cash	170	147	106	136	151	162	176	193	211	229	246	262	278	291	303	316	329	342	355	368	
<b>Excess of Cash</b>	<b>985</b>	<b>345</b>	<b>109</b>	<b>477</b>	<b>159</b>	<b>141</b>	<b>148</b>	<b>203</b>	<b>253</b>	<b>377</b>	<b>514</b>	<b>713</b>	<b>944</b>	<b>1 147</b>	<b>1 368</b>	<b>1 576</b>	<b>1 771</b>	<b>1 944</b>	<b>2 127</b>	<b>2 328</b>	
				457																	
				4.4%																	
Mortgage Loans	170	72	69	65	62	58	55	51	48	44	41	37	34	30	27	23	20	16	13	9	
Bank Loans	-	-	-	20	13	13	14	17	19	25	32	41	51	60	70	79	88	96	104	128	
<b>Debt</b>	<b>170</b>	<b>72</b>	<b>69</b>	<b>85</b>	<b>74</b>	<b>71</b>	<b>68</b>	<b>68</b>	<b>67</b>	<b>69</b>	<b>72</b>	<b>78</b>	<b>85</b>	<b>90</b>	<b>97</b>	<b>102</b>	<b>108</b>	<b>112</b>	<b>117</b>	<b>137</b>	
Lease Liabilities	-	-	179	141	126	109	95	84	74	64	56	48	40	34	28	23	19	16	13	11	
Net Debt	-815	-273	138	-251	-109	-124	-161	-244	-323	-471	-632	-850	-1 098	-1 314	-1 548	-1 787	-1 973	-2 158	-2 352	-2 547	
Net Debt (CHECK)	-815	-273	139	-251	-109	-124	-161	-244	-323	-471	-632	-850	-1 098	-1 314	-1 548	-1 787	-1 973	-2 158	-2 352	-2 547	
<b>EQUITY</b>																					
Transaction with shareholders (Changes in equity - TCI)	-291	-	333	-	-	-	-	-	-	-31	-43	-58	-76	-103	-131	-156	-183	-211	-235	-241	
Transaction with shareholders (Cash adjustments to equity)	-291	-	333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Payout Ratio	29100%	0%	1041%	0%	0%	0%	0%	0%	0%	15%	17%	19%	21%	26%	31%	36%	41%	46%	50%	50%	
Shareholders' equity	1 709	1 419	832	1 133	1 164	1 227	1 328	1 452	1 619	1 793	2 005	2 254	2 540	2 833	3 123	3 401	3 665	3 912	4 147	4 388	

Figure 99 Balance Sheet

Period	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Year	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F
<b>Core Invested Capital</b>	850	1 081	920	834	1 004	1 053	1 115	1 156	1 244	1 271	1 322	1 353	1 393	1 468	1 526	1 584	1 641	1 703	1 744	1 790
<b>Core Result</b>	92																			

Related Caption	Driver	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
<b>Revenues EMEA</b>	Inflation in DKK	0.7%	0.7%	0.3%	1.1%	1.4%	1.5%	1.6%	1.7%	1.8%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Physical Stores Revenue					1 245	1 283	1 321	1 396	1 498	1 594	1 690	1 784	1 874	1 940	2 009	2 081	2 156	2 232
	% of Revenue				92%	92%	92%	91%	91%	91%	90%	90%	90%	90%	90%	90%	90%	90%	89%
	# of Stores	4 121	2 971	2 263	1 986	1 976	1 946	1 917	1 936	1 985	2 044	2 095	2 137	2 169	2 169	2 169	2 169	2 169	2 169
	Growth					-0.2%	-1.5%	-1.5%	1.0%	2.5%	3.0%	2.2%	2.0%	1.5%					
	ARPP	0.4	0.5	0.5	0.6	0.63	0.66	0.69	0.72	0.75	0.78	0.81	0.83	0.86	0.89	0.93	0.96	0.99	1.03
	GDP Growth Rate	2.5%	2.1%	-3.0%	3.8%	3.9%	3.3%	3.2%	3.1%	3.1%	1.6%	1.6%	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%	1.6%
	eCommerce & etailers Revenue				104	112	119	127	138	152	166	180	194	208	220	231	242	254	268
	% of Revenue				8%	8%	8%	9%	9%	9%	9%	10%	10%	10%	10%	10%	10%	11%	11%
	Penetration Rate / Growth of Channel					3.2%	2.8%	3.2%	2.6%	2.6%	2.4%	2.2%	2.0%	1.8%	1.6%	1.4%	1.2%	1.0%	1.0%
<b>Revenues Americas</b>	Physical Stores Revenue					124	127	130	132	133	133	134	135	138	142	147	152	157	163
	% of Revenue				63%	62%	61%	60%	59%	58%	57%	56%	55%	54%	53%	53%	52%	51%	51%
	# of Stores	1 505	777	315	2 482	2 482	2 482	2 482	2 457	2 408	2 348	2 289	2 243	2 221	2 221	2 221	2 221	2 221	2 221
	Growth								-1.0%	-2.0%	-2.0%	-2.0%	-1.0%						
	ARPP	0.20	0.29	0.45	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07
	GDP Growth Rate	1.8%	0.7%	-6.2%	5.4%	3.3%	2.1%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%
	eCommerce & etailers				7030	76	82	88	93	98	102	107	112	118	125	133	140	148	158
	% of Revenue				37%	38%	39%	40%	41%	42%	43%	44%	45%	46%	47%	47%	48%	49%	49%
	Penetration Rate / Growth of Channel					3.1%	2.9%	2.6%	2.6%	2.6%	2.4%	2.2%	2.0%	1.8%	1.6%	1.4%	1.2%	1.0%	1.0%
<b>Revenues Asia</b>	Physical Stores Revenue					964	1023	1136	1266	1419	1547	1694	1844	1976	2106	2230	2348	2471	2597
	% of Revenue	100%	100%	100%	100%	100%	97%	97%	97%	97%	97%	97%	97%	96%	96%	96%	96%	96%	96%
	# of Stores	1644	1556	1223	1060	1060	1060	1070	1097	1125	1159	1199	1235	1254	1266	1273	1273	1273	1273
	Growth																		
	ARPP	0.61	0.60	0.51	0.83	0.91	0.97	1.06	1.15	1.26	1.33	1.41	1.49	1.58	1.66	1.75	1.85	1.94	2.04
	GDP Growth Rate	10%	4%	1%	12%	8%	8%	8%	8%	7%	4%	4%	4%	4%	3.5%	3.4%	3.3%	3.2%	3%
	eCommerce & etailers				0	32	36	41	48	53	60	66	73	79	85	91	97	103	103
	% of Revenue					3.0%	3.1%	3.2%	3.2%	3.2%	3.3%	3.4%	3.5%	3.5%	3.6%	3.7%	3.7%	3.8%	3.8%
	Penetration Rate / Growth of Channel																		
<b>Revenues BP&amp;AO</b>	# key partnerships	13	15	16	19	26	31	35	39	42	45	47	48	49	49	49	49	49	49
	ARPP	18	15	15	14	15	16	17	18	19	19	20	21	21	22	22	23	24	24
	ARPP Growth Rate					7.0%	6.0%	6.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	2.8%	2.6%	2.4%	2.2%	2.0%
<b>Production Costs</b>	Aluminum Price Growth (in DKK)					-10.6%	-4.6%	6.3%	3.6%	2.3%	2.1%	1.9%	1.9%	1.9%	1.2%	1.2%	1.2%	1.2%	1.2%
	Staged Margin	53.5%	44.2%	44.2%	46.0%	49.0%	50.0%	51.0%	52.0%	53.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	55.0%
	Weight	34.1%	36.9%	38.1%	38.0%	37.5%	37.5%	37.5%	37.5%	37.0%	36.5%	36.5%	36.5%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%
	Flexible Living Margin	51.1%	46.6%	47.8%	46.0%	49.0%	50.0%	51.0%	52.0%	53.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%	55.0%
	Weight	15.6%	15.8%	22.2%	23.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%
	On-the-Go Margin	35.0%	16.5%	20.7%	26.0%	28.0%	32.0%	32.0%	32.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
	Weight	42.3%	35.2%	29.6%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
	BP&AO Margin	93.0%	96.4%	96.2%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%
	Weight	8.1%	12.1%	10.1%	9.0%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
	TOTAL	48.5%	41.2%	43.3%	44.6%	46.8%	48.6%	48.6%	49.2%	49.9%	50.7%	51.0%	51.5%	51.8%	52.2%	52.5%	52.5%	52.6%	52.6%
<b>Distribution &amp; Marketing costs</b>	% of Sales	16.5%	21.3%	21.9%	14.3%	14.0%	17.0%	18.2%	18.4%	20.4%	21.4%	22.7%	22.8%	23.9%	24.0%	24.9%	25.0%	25.0%	26.0%
<b>Administration costs</b>	Variable part 50%	26	24	11	12	13	13	14	15	15	16	16	17	17	18	18	18	19	19
	Average # of employees (excluding Production-related)	854	773	719	744	785	829	874	918	959	993	1 022	1 048	1 071	1 093	1 112	1 132	1 153	1 173
	Growth rate of # of employees		-8.6%	-6.9%	3.5%	5.2%	5.9%	5.2%	5.0%	4.8%	3.9%	3.0%	2.8%	2.0%	1.8%	1.6%	1.6%	1.6%	
	Fixed part 50%	26	24	11	12	18	18	18	18	18	18	18	18	18	18	18	18	18	18
<b>Staff Costs</b>	Average # of employees	854	773	719	744	785	829	874	918	959	993	1 022	1 048	1 071	1 093	1 112	1 132	1 153	1 173
	Change in # of employees		-82	-53	25	41	43	46	44	41	34	30	26	23	21	20	20	20	21
	Average Cost per Employee	0.52	0.62	0.70	0.74	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
<b>Development Costs</b>	Average cost per Product Launches & Software update	5.5	5.8	1.9	0.6	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Product launches & Software updates	10	9	8	14	6	8	11	9	12	9	8	6	5	5	5	5	5	5
<b>Depreciation</b>	% Tangible Assets previous year	23.4%	49.1%	27.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%
<b>Amortization</b>	% Intangible Assets excluding Goodwill previous year	61.2%	64.1%	50.0%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%
<b>Interest income from subleases</b>	% of right of use assets	-	-	0.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Interest expenses to banks</b>	% of debt last year		12.4%	15.3%	23.2%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%
<b>Interest expenses on lease liabilities</b>	% of lease liabilities			-5.6%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
<b>Taxes</b>	Statutory tax rate	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%

Figure 99 Drivers

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<b>Buy</b>	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
<b>Hold</b>	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
<b>Sell</b>	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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