GALAXY HEALTH INTERNATIONAL LIMITED

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1. Executive Summary

In the recovery state of COVID-19, Galaxy attained a decline of revenue and EBIT by 23.21% and 49.54%. The gloomy result is linked to its slow response in digital transformation and prolonged drug development. To unlock the future potentials, it's high time for Galaxy to streamline its production and initiate more strategic collaborations with partners (e.g. universities, research institute). Galaxy should also take actions to coordinate its financing activities and deal with economic risks proactively by setting up a centralized treasury function. In line with the listing rules, Galaxy should set up a robust governance mechanism to enhance its compliance to deal with the ESG issues and risks (e.g. non-compliance of ESG reporting, ineffective governance and oversights). Building on these initiatives, Galaxy is expected to create more value for its shareholders and achieve a steady growth of operating profit over the next three years, which compensates a proposed dividend cut in 2022 and 2023.

2. Corporate Appraisal

2.1 Environmental scanning

Galaxy has built up good reputation in pharmaceutical industry. With a pool of talents, it derives 70.58% and 29.42% of revenue from its patent-products and generic products respectively in 2021. Despite this, Galaxy is a digital laggard, which takes no actions to capture the opportunities brought by digital transformation (e.g. cost savings arising from streamlined operation). In addition, it experiences threats arising from macro-environment, including the fluctuation of exchange rate and interest rate. At micro-level, the pharmaceutical industry is competitive, in which 68% of the market total sales, ($139.34 billion) are shared by ten industry rivalries. To sustain its growth, Galaxy has to differentiate itself by developing more patented products. To achieve this, Galaxy should build up relationships with its industry peers[1] and

[1] China Pharmaceutical Innovation and Research Development Association (2022). *Current and future trends in global and Chinese biopharmaceutical development*. Retrieved from http://phirda.com/artilce_4350.html

make a strategic move to digitalize its operation. A summary of SWOT analysis is shown in Table 1.

Strengths

- **Well-established reputation**
- **A pool of talents**: e.g. attract and retain graduate at top universities
- **Diversification** of market risks: e.g. penetrate in geographical markets including Japan, USA, Germany, France and Mainland China

Weaknesses

- **Excessive borrowing** results in high gearing
- **Corporate governance** problems: e.g. lack of separation of the chairman and CEO
- **Compliance issues**: e.g. corruption, violation of listing rule
- **Lack of ESG initiatives**: e.g. no regular environmental risk assessment and protection actions
- **Lack of innovation**: e.g. slowdown in R&D

Opportunities

- **Favorable governmental policies**: e.g. grants and subsidies available for innovation and productivity improving
- Customers are **more health conscious**: e.g. increasing spending on health and wellness and products to deal with "long covid"
- **Trends of digitalization** to streamline operations

Threats

- **Keen competition**: e.g. aggressive rivalries
- **High input and low output**: e.g. only 20% of products are successfully developed
- **Turbulent macro-environment**: e.g. fluctuation of exchange rate; increasing HIBOR rate from 0.15% to 2.5% in 2022
- **Problems in supply chain:** e.g. shortages and higher prices for materials

Table 1: SWOT Analysis

2.2 Strategy formation

Value-chain analysis

Galaxy has primary activities in research, clinical trials and patent registration, which should normally take 10 years before commercialization. Despite its core competence in R&D and production, Galaxy creates value to the group slowly due to the lack of collaboration with research partners and digital transformations.

Pharmaceutical Industry Value Chain

	Research/ Discovery	Preclinical Development	Clinical Trials	Register / Approval	Production & Deliver	Marketing & Sales	Services
Average time	1-3 years	1.5 years	6-7 years	1-2 years			
Average cost	$196 million	$122 million	$1-2.5 billion				

Table 2: Pharmaceutical industry R&D value chain[2]

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[2] Mitchell, C. H. (2020). *The Drug Discovery Process*. rodent research models. Retrieved October 12, 2022, from https://www.taconic.com/taconic-insights/quality/drug-development-process.html

Galaxy is advised to pursue differentiation strategy to distinguish itself in the market by developing breakthrough medicines continuously. To gain the competitive advantages, Galaxy should prioritize its resources and concentrate on its core activities, including research and production.

2.2.1 Strategic Collaboration

Partner with universities: To shorten the development time, Galaxy should collaborate with highest ranked universities[3] to jointly launch the drugs. By forming a strategic alliance with the universities, laboratories and research institutes, the research team from each side can leverage its core competence and assets (e.g. research team, lab facilities and know-how) with each other in carrying out more collaborative works. With enhanced capacity of research and discovery, more pipeline products can be developed. The shared responsibility for clinical trials can also speed up the drug development process. The proposed action links Galaxy with partners and is expected to boost the success rate of product development.

Apply for government subsidies: The Hong Kong Government's Enterprise Support Program invites collaborations between university and industry and provide grants and subsidies up to $10 million for supporting clinical trials and researches. Galaxy and its partnering universities are advised to provide the proposals with prior track records and clinical trial data to satisfy the grant application requirements, including science and technology innovation involved, management participated, opportunities for commercialization, and benefits to society. Through the above means, more innovative pharmaceutical projects can be formed. The development of upstream activities is expected to be accelerated.

[3] Deloitte (2022). *Biopharma digital transformation: Gain an edge with leapfrog digital innovation.* Retrieved from https://www2.deloitte.com/us/en/insights/industry/life-sciences/biopharma-digital-transformation.html

2.2.2 Digital transformation of production line

Galaxy is recommended to streamline its clinical trials and productions to shorten the production cycles.

Digitalization of clinical management: To speed up the time spent in clinical trials, Galaxy should adopt digital tools (e.g. developing a mobile app) to recruit and manage patients. With the help of the digital trial management tools, the medication data can be retrieved in real time and timely responses can be made (e.g. patients with adverse reactions after trial). With the use of big data techniques, Galaxy can make use of massive clinical trial data to modify the pipeline drugs. In addition, the data can be used for auditing the clinical trials result. To well protect the security of patient information, the data should be well-encrypted when transmitted and stored. It is estimated that the project requires an initial investment of $35 million, which can be financed by internal reserve.

Smart factory: To improve the production efficiency, Galaxy should streamline its production process by the adoption of "Industry 4.0" concept. With big data from its industrial clients, the production plan can be accurately formed. In addition, autonomous robots can be introduced to enhance the efficiency in production and inventory handling; and optimize the production planning to deal with bottleneck stations. It is estimated that the digitalization required $25 million initial investment. Galaxy should apply for the "Innovation and Technology Fund" provided by the Innovation and Technology Commission for cash subsides and super-tax deduction of 300% of development costs. After netting a cash subsidy of 40% of $10 million, the remaining will be financed by issuing new shares.[4]

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[4] Mingpao (2020). *Fund Application of research and development*. Retrieved from https://m.mingpao.com/pns/港聞/article/20200925/s00002/1600971554330/申投資研發資助計劃-藥廠獲40-現金回贈
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2.2.3 Make or license-out decision

Galaxy has production constraints which hinder its ability in meeting the production requirement. Therefore, a make-or-license-out decision should be made with reference to the current product portfolio: Covid-19 products (stars), patent products (star/ question mark) and generic products (dogs).

Make - To better utilize its capacity, Galaxy is advised to prioritize its resources in producing Covid-19 products and other patented products (e.g. medicine curing cancer) to reap the potential high returns from selling the distinguished patented products. In addition, making can helps Galaxy to reduce the risks of leaking the production formula and knowhow to others as these are important sources of its competitive advantages.

License-out: For products with uncertainty in future growth or requires considerable ongoing investments, Galaxy is expected to license out to other producers to release the production constraints. By granting the right to license a patented medicine, Galaxy can obtain initial income and stable income in forms of commission/ royalties.

The strategic options listed in the above section fits Galaxy's vision of "producing innovative, high quality and cost-effective health solutions" and capitalize the opportunities brought by the recovery of COVID-19 (*Suitability*). The projects are expected to bring in an increase in net profit by 15.12% and 24.47% in 2023 and 2024 onwards (*Acceptability*). The budgeted resource and implementation timelines of the actions are summarized in Section 5 (*Feasibility*).

3. Financial and Treasury management

3.1 Financial Overview[5]

Profitability – In 2021, Galaxy had a decrease in earning capacity with 23% (11%) decrease in sales (cost of sales). A decrease of gross profit margin to 13.71% is partially due to the mark down of expired patented-products. In addition, the profit is eroded as 80% of R&D expenses needed to be expensed with reference to HKAS38 arising from development failure and unfavorable movement of exchange rate. Therefore, the net profit margin (13.71%) in 2021 is relatively low compared to its industry benchmark (34.10%). Therefore, Galaxy should find ways to grow sustainably and control the risks properly (to be discussed in section 3.2 and 3.3).

Profitability	2021		2020	
	Benchmark	Galaxy	Benchmark	Galaxy
Net Profit Margin	34.10%	13.71%[6]	30.20%	20.24%
Gross Profit Margin	46.90%	71.91%	45.10%	75.90%
Return on Asset	7.97%	9.38%	5.84%	19.40%

Liquidity – Galaxy's current ratio is deteriorated in 2021 due to a sizable investment in non-current assets (by $3,738,322,000) and dividend paid (by $1,125,000,000). As the cash flow from operating activities ($1,745,017) is not able to meet the uses of cash, Galaxy is using bank borrowing excessively to finance its operations. Despite its ability to meet immediate debt, Galaxy should strengthen its treasury and dividend management to reduce the unnecessary finance cost (to be discussed in section 3.3 and 3.4).

Liquidity	2021		2020	
	Benchmark	Galaxy	Benchmark	Galaxy
Current Ratio	2.37:1	1.78:1	3.16:1	2.23:1
Quick Ratio	2.36:1	1.46:1	3.16:1	1.91:1

[5] For cross-sectional analysis, WuXi Biologics (Cayman) Inc.is selected as the benchmark.

[6] **Adjustments** are made to correct the understatement of receivable impairments ($160,410,000) and inappropriate provision of environmental cost of $68,756,000 as there are no present obligation to engage in investigation, remedy, and maintenance activities (**HKAS37**).

Solvency – A high debt-to-asset ratio (86.81%) in 2021 implies that Galaxy had excessive borrowing which hamper its ability to get additional financing or refinancing. In addition, the solvency risk is high as Galaxy has commitment to pay interest costs and repay the loan when there are any breach of covenants. Without a proper mix of debt and equity financing, the overall financing will be high. Galaxy is recommended to lower its gearing and resort to equity financing if external fund is needed.

Solvency	2021		2020	
	Benchmark	Galaxy	Benchmark	Galaxy
Debt Ratio	25.72%	86.81%	27.84%	84.01%

3.2 Treasury Management

Currently, Galaxy has no systematic ways to deal with its gearing, foreign exchange, and interest risks. In the following sections, the treasury policies of Galaxy are discussed:

3.2.1 Gearing Policy

Galaxy relies heavily on debt financing to finance its operations, irrespective of the length of the project and the existing gearing position. In 2021, 88.32% of borrowings are long-term whereas the rest of loans will be due within 12 months). With no coordination of financing activities among the group, each operating unit has to negotiate the loans with banks separately.

Recommendation: To reduce transaction costs with banks, Galaxy is advised to form a cash budget based on the projected cash position at the company level and negotiate the terms of the loans with bank by its centralized treasury function. In addition, the group should consider the gearing policy, financing costs and the horizon of project before selecting the financing methods. Given the high solvency risks, the company should resort to equity financing, including using its reserve and issuing shares to existing shareholders or strategic investors.

3.2.2 Interest Rate Policy

Currently, Galaxy takes a passive role in dealing with interest rate risks. In 2021, the one-month HIBOR has risen to 2.5% (as presented in the table 3), resulting in increase in finance cost. The following table show the unfavorable movement of interest rate in prior two years:

Table 3: 1-month Hong Kong Interbank Offered Rate from 2020 to 2022

Recommendation: To solve the problem, Galaxy is advised to use higher proportion of fixed-rate loan in high interest rate period to lock the rate. In addition, the management should consider the needs of forming an interest rate swap contract. If deemed necessary, Galaxy should renegotiate the terms of the loan or decide to terminate the loan and refinance it with a new one when interest rate is expected to drop. To reduce the risk exposures, Galaxy may also consider if the funds could be sourced by its in-house bank enabled by the treasury function.

3.2.3 Foreign exchange risk

The current exchange rate policy of Galaxy is to convert the foreign currency proceeds into Hong Kong dollars on the receipt date. Table 4 shows that in 2022, there are unfavorable movement of exchange rate of JPY and EUR. As a result, less functional currency will be received after conversion.

Recommendation: To solve the problem, Galaxy is advised to use appropriate measures enabled by its treasury functions, such as netting and hedging (to be discussed in section 3.3). In addition, Galaxy can avoid the foreign exchange by invoicing its foreign industrial customers using Hong Kong Dollars (HKD).

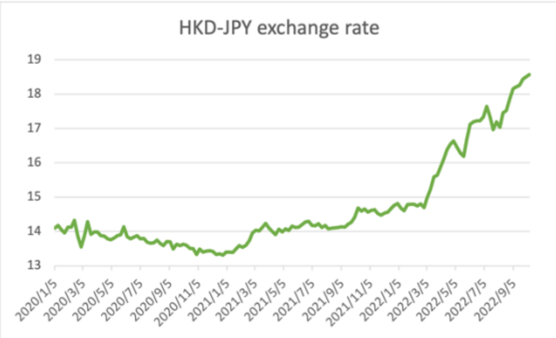


Table 4: exchange rate between HKD and JPY, EUR

3.3 Recommendations: In-house Treasury Center

Galaxy has an urgent need to establish its in-house treasury center to better coordinate its financing activities within the group as the following benefits could be obtained:

Problems	Benefits to Galaxy
Lack of coordination of financing activities	**Better cash management**: e.g. pooling the cash receipts in foreign currency; better coordination of the source and use of cash within Galaxy.
Lack of netting policy	**Better foreign currency payment and collection**: e.g. transaction costs and banking costs can be saved as the size and frequency of translation is reduced.
Inefficient use of idle funds	**Better cash utilization**: e.g. serving as an internal bank of Galaxy; interest cost is within Galaxy's control.
No systematic ways to deal with foreign exchange risk	**Better foreign exchange services**: e.g. after netting the receipt and payment, proper hedging tools, such as forwards, futures, swaps, could be applied.
No systematic ways to handle the interest rate risk	**Better interest risk management**: e.g. better coordination in using smoothing and matching strategies; select appropriate hedging tools, such as forwards, futures, and swap, and forward rate agreement.

Table 5: benefits of in-house treasury center

Galaxy should strengthen its control of the treasury functions through periodic reporting. In addition, proper governance measures (e.g. control and oversight from audit committee, non-executive directors) should be used to monitor the risk programs to avoid scandals over the use of derivatives[7].

3.4 Dividend policy

Galaxy currently declared and distributed a large proportion of earning as dividend. The dividend payout ratio is 148.7% in 2021 (79.53% in 2020), reflecting a positive signal from the management about the company's future.

	2021	2020
Dividend	$1,125,000,000	$1,075,000,000
Net Income	$756,561,000	$1,351,700,000
Dividend Payout Ratio	148.70%	79.53%

Despite this, less earnings are reinvested, which may hinder the development in the long run. In 2021, the free cash available is $2,281,363,080 exceeds the dividend payment $1,125,000,000, while the returns on investment is higher than the shareholder's required return[8]. Therefore, Galaxy has flexibility in its dividend policy. As profitable projects are available (discussed in section 2), Galaxy is advised to adjust the size and forms of dividend (e.g. share dividend) and retain larger portion of earnings for reinvestments.

2021				
FCFE	$2,281,363,080	>	**Dividend**	$1,125,000,000
ROE	35.85%	>	**Required return**	12.6%

The board of Galaxy should consider additional factor when making dividend decisions, including: (1) its size of earnings, (2) its needs for future expansion, (3) current liquidity and gearing position, and (4) other covenant requirements.

[7] CIMA (2022). *Interest Risk Management*, Retrieved from: https://issuu.com/cimaglobal/docs/interest_rate_risk_management_an_investigation_i/1?e=1740886/5033356
[8] For comparison purpose, the required return rate is assumed to be the industry average of ROE.

4. Issues in Environmental, Social and Governance (ESG)

Due to the lack of accountability mechanism, Galaxy has compliance issues in various aspects, including corporate governance, and environment and society. In the following section, measures to enhance compliance with HKEX and the national healthy authority of Luxembourg are proposed.

4.1 Corporate governance and other compliance issues

Problems	Solution
Corporate governance issues: e.g. Vincent Hui serve as the CEO and chairman	The role should be separated to have a proper balance of power.
Deviations from HKEX requirement for ESG reporting: e.g. only one page disclosure in its annual report	A stand-alone ESG reports should be issued as a communication tool.
Violation of the prevention of Bribery Ordinance, e.g. bribery scandals	Establish code of ethics and business conducts; sign the declaration of conflict of interest; assess the corruption and fraud risks at regular intervals[9].
Breach of labor law: e.g. slow in implement the minimum wage rule	Set up a risk committee to review if the activities are consistent with rules and regulation[10].

Table 6: Galaxy's governance problems and solutions

Galaxy has deficiency in corporate governance, such as lack of separation of CEO and board and breach of rules and regulations, which deviated from the corporate governance code. To ensure compliance and preserve the interests of minority shareholders, the above actions should be taken.

4.2 Social and Environmental

Due to the lack of board oversight, Galaxy has a minimum commitment in meeting ethical and public expectations. Galaxy should adopt initiatives to

[9] ICAC (2022). *Fifteen things a company/staff must do to prevent corruption at source*. Retrieved from: https://cpas.icac.hk/EN/Info/TP_Page?cate_id=10015&infomainid=2483&istpmain=1
[10] Deloitte (2022). *Risk Committee Resource Guide*. Retrieved from: https://www2.deloitte.com/content/dam/Deloitte/za/Documents/governance-risk-compliance/ZA_RiskCommitteeResourceGuideOnline2014_22052014.pdf

include stakeholder engagement in its governance structure. To ensure the well-beings of various stakeholders, the following measures should be adopted:

Problems	Solution
Potentially fatal errors: e.g. cease the audit of the clinical trial for 2 years.	Carry out clinical trial to ensure best practice of trails; and ensure the safety of patients involved.
Lack of occupational health and safety: e.g. cut cost on safety checks	Assign the role of safety management to those charged with governance; set adequate budget for safety compliance; and provide safety training and checking[11].
Lack of initiative to deal with emission, disposal of resource and wastage	Reduce emissions and pollutants; and optimize chilled water and wastage.
Lack of stakeholder's communication: e.g. no diversified channel for handling complaints	Ensure timely communication with its stakeholder, e.g. liaison officer.

Table 7: Galaxy's environmental and social problems and solutions

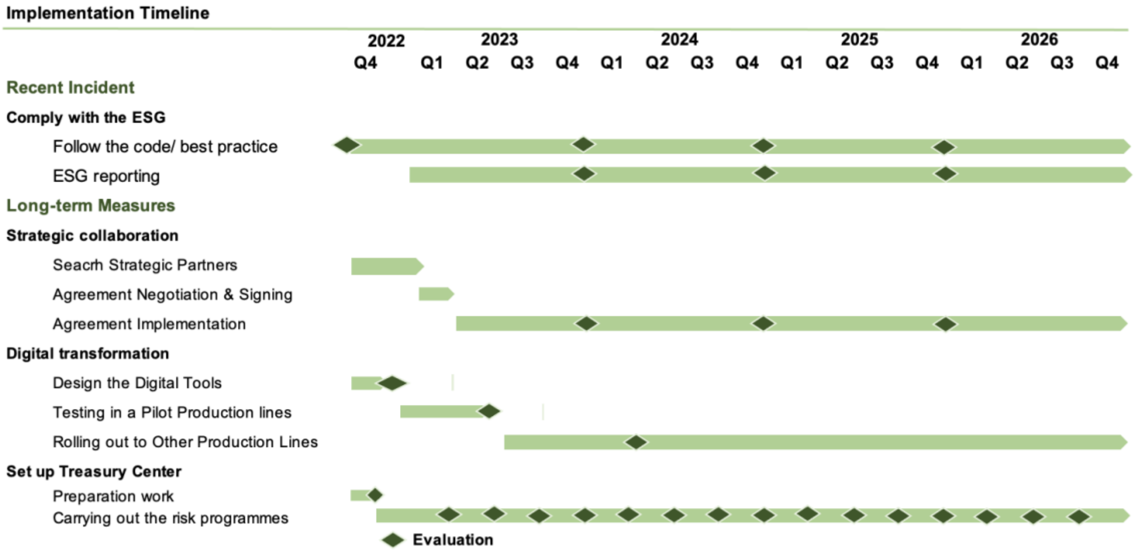
To enhance the compliance with HKEX and code of governance, Galaxy should establish a robust governance system and establish an accountability mechanism. An ESG committee, comprising of a balance of independent director and stakeholders, should be formed to identify, measure and handle the issues and risks arising from non-compliance and deviations from the best practices. In addition, Galaxy should also issue a stand-alone ESG reports, with both ESG policies and key performance indicators (KPIs) to align with reporting requirement and communicate with stakeholders. Other credentials and records (e.g. ISO standards, prior track records and trail audit results) should also be supplied to the Luxembourg Ministry of Health for their evaluations on suppliers[12].

[11] Labor Department (2022). *Code of practice on safety management*. Retrieved from: https://www.labour.gov.hk/eng/public/os/manage.pdf

[12] Luxembourg Ministry of Health (2022). *Place a high weighting on the health and safety of its employees and spending on safety checks and equipment when evaluating the tender*. Retrieved from: https://msan.gouvernement.lu/en/actualites.html

5. Implementation

5.1 Timeline



5.2 Service Provided

Areas	Services to be offered
Financial reporting advisory	- Provide advisory of management reporting, e.g. reporting for its treasury functions.
Internal audit	- Provide financial service assurance, e.g. financial statement audit - Provide digital assurance, e.g. attestation on digital transformation.
Compliance advisory	- Provide regulatory support to ensure compliance of listing rule and other rules and regulations, e.g. compliance monitoring - Provide advisory on ESG reporting guidelines, e.g. producing stand-alone ESG report.

6. Financial Projection

Appendix 1 - Statement showing sales revenue

	Assumption					
		2021	2022	2023	2024	2025
Patent	Assume growth rate is 10% in 2022, and 5% constant growth onwards (Note1)	4,322,245	4,754,470	4,992,193	5,241,803	5,503,893
Generic	Assume constant growth rate is 5% (Note 2)	2,256,875	2,369,719	2,488,205	2,612,615	2,743,246
Revenue from Luxembourg	Assume Galaxy derives income from Luxembourg Health Authority in 2023 onwards	0	0	500,000	525,000	550,000
		6,579,120	7,124,188	7,980,398	8,379,418	8,797,138
License out						
initial patent license revenue	Assume the license-out revenue is 10% of patent revenue	0	475,447	0	0	0
Sales commissions	Assume commission 5% of license-out revenue	0	23,772	24,961	26,209	27,519
Total		6,579,120	7,623,408	8,005,359	8,405,627	8,824,658

Note 1: Galaxy launches the COVID-19 patented product in 2022 and growth rate refer to the benchmark firm and make some adjustments

Note 2: Galaxy improves its marketing and sales by the staff recruitment and training

Appendix 2 - Income statement

Income statement						
	Assumption	2021	2022	2023	2024	2025
		HK$'000	HK$'000	HK$'000	HK$'000	HK$'000
Revenue	See appendix 1	6,579,120	7,623,408	8,005,359	8,405,627	8,824,658
Cost of sales	(Note 4)	-1,848,330	2,092,773	2,094,631	1,887,016	2,027,942
Gross profit		4,730,790	5,530,635	5,910,727	6,518,611	6,796,716
Distribution costs	Assume 1.6% of revenue	-114,665	-121,975	-128,086	-134,490	-141,195
R&D expense	(Note 5) and assume constant growth rate is 7% in 2022 onwards	-1,178,910	-1,261,434	-1,349,734	-1,444,215	-1,545,311
Selling and admin expenses	Assume 34% of revenue	-2,226,211	-2,591,959	-2,721,822	-2,857,913	-3,000,384
Other operating expenses	Assume 3% of revenue	-210,598	-228,702	-240,161	-252,169	-264,740
Operating profit		1,000,406	1,326,566	1,470,925	1,829,823	1,845,088
Net financial expense		-98,621	-125,786	-104,070	-109,273	-114,721
Profit before tax		901,785	1,200,780	1,366,855	1,720,550	1,730,367
Taxation	(Note 6)	-145,224	-240,156	-260,996	-344,110	-346,073
Net income		756,561	960,624	1,105,859	1,376,440	1,384,294

Note 4: The implementation of digital production yields a cost saving of 5% in Q4 2023
Note 5: Assume 70% (failure) of development budget of $1802048 is expensed (With reference to HKAS38)
Note 6: Assume a super-deduction of 300% of R&D expense is obtained in 2023.

Appendix 3 - Statement of financial position

	Assumption	2021	2022	2023	2024	2025
		HK$'000	HK$'000	HK$'000	HK$'000	HK$'000
Non-current assets						
Property, plant and equipment	(Note 7)	3,657,201	3,730,345	3,854,952	3,932,051	4,010,692
Intangible assets	(Note 8)	4,186,430	4,727,044	4,821,585	4,918,017	5,016,377
		7,843,631	8,457,389	8,676,537	8,850,068	9,027,069
Current assets						
Inventories		680,504	694,114	701,055	736,108	728,747
Trade and bills receivables		1,891,481	1,853,651	1,798,042	1,726,120	1,743,381
Other current assets		134,223	135,565	138,277	141,042	138,221
Bank balances and cash	Assume the digitalization implemented in 2023	1,051,659	1,077,950	1,104,899	1,132,522	1,160,835
		3,757,867	3,761,281	3,742,273	3,735,792	3,771,184
Total asset		11,601,498	12,218,671	12,418,810	12,585,860	12,798,254
Current liabilities						
Trade payables		402,551	410,602	422,920	418,691	431,252
Other payables		299,521	308,507	311,592	305,360	308,413
Provisions		439,681	452,872	466,458	443,135	447,566
Tax liabilities		147,561	150,512	153,522	156,593	164,423
Bank borrowing		825,463	784,190	721,455	663,738	610,639
		2,114,777	2,106,683	2,075,947	1,987,517	1,962,293
Non-current liabilities						
Borrowings		6,245,881	6,245,881	5,746,211	5,746,211	5,746,211
Provisions		812,978	788,588	788,588	788,588	788,588
Other non-current liabilities		898,105	853,200	810,540	770,013	731,512
		7,956,964	7,887,669	7,345,339	7,304,812	7,266,311
Total liability		10,071,741	9,994,352	9,421,285	9,292,329	9,228,604
Total assets less total liabilities		1,529,757	2,224,319	2,997,525	3,293,531	3,569,649
Capital and reserves						
Share capital		500,000	500,000	550,000	550,000	550,000
Reserves		1,029,757	1,724,319	2,447,525	2,743,531	3,019,649
Total equity		1,529,757	2,224,319	2,997,525	3,293,531	3,569,649

Note 7: Assume growth rate at 2% except in 2023 with investment of digitalization of $50 million
Note 8: Assume 30% (success) of development budget of $1802048 is capitalized as intangible assets (With reference to HKAS38) and grow at 2% in 2023 onwards