

WATCH OUT, HONG KONG!

A Study on the Sustainable Development of
the Watch and Clock Industry of Hong Kong



HKPC[©]

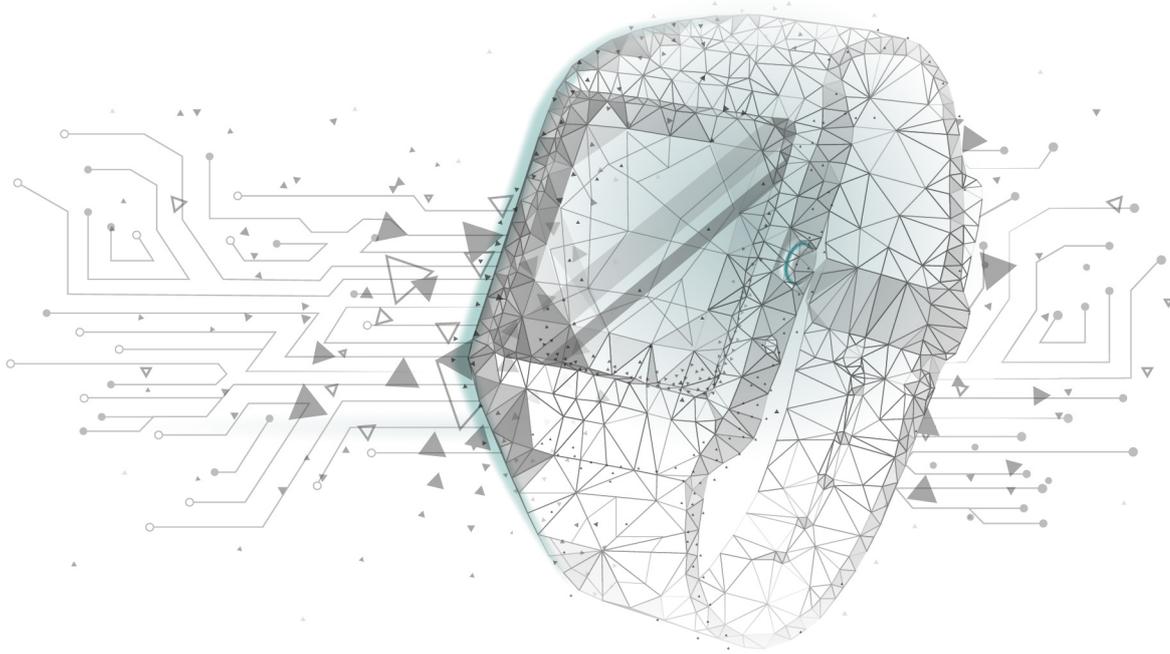
March 2018



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Executive Summary



Watch out, Hong Kong!

A Study on the Sustainable Development of the Watch and Clock Industry in Hong Kong

About this Study

The global watch industry has been hit by a recession in the past three years. As a key player in the market, **Hong Kong has borne the brunt of a substantial drop in exports for three years running (since 2014)**, in an alarming situation for the local watch and clock (WC) industry.



Two leading associations in the local WC industry, **the Federation of Hong Kong Watch Trades and Industries (FHKWTI)** and **the Hong Kong Watch Manufacturers' Association (HKWMA)**, commissioned the Hong Kong Productivity Council (HKPC) for an industry study to look into the **problems** and identify **potential development areas** for the industry.

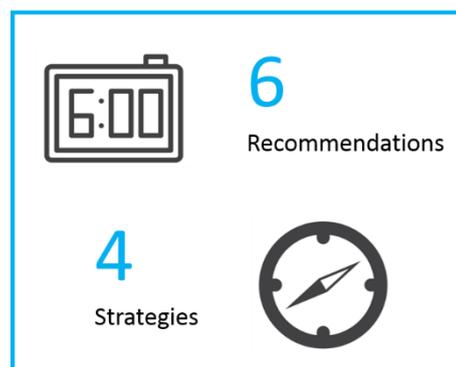
Methodology



The study is based on extensive desk research on the market situation of the global WC industry, followed by a **focus group study** on the perspectives and businesses of key leading players, covering **component manufacturers, original equipment manufacturers (OEMs), original design manufacturers (ODMs), licensed brands, brand owners, distributors, retailers, and trade associations.**

The study analyses the current **market** situation, **technology** trend, watch-related **policy**, and **human resources** development in the global watch industry, scrutinising **best practices** by industry leaders to reveal the **performance gap** in the local WC industry.

Reflecting on the present state of the local industry, the study provides insights on its **future positioning** and lays out a **strategy for change**, with four key strategies and six recommendations to reach its strategic goals.



Key Findings

Global Watch Market Down

Since 2015, total exports of horological products from major exporting countries have dropped significantly in value and unit terms. Hong Kong also saw successive decreases in wristwatch exports (by value) to most of its key exporting countries from 2014 to 2016.



Year-on-year change

Switzerland	-14.7%
Hong Kong	-11.10%
Mainland China	-3.4%

Total Exports of Horological Products by Value from Major Exporting Countries, 2016

Shrinkage in the Luxury Segment

Apart from direct impact due to the global economy, national policies of individual countries also pose notable influences on the watch market.

The luxury watch market was hit by a sluggish global economy and falling Chinese demand which depressed the export value of high-end Swiss watches (defined by unit price over CHF3,000). Having peaked in 2014, total exports of Switzerland in both unit and value terms are on a falling trend. Luxury watch consumers have become more price-conscious, pushing prices down.



Intensified Competition in the Low-end Market

Hong Kong's leading position as the largest supplier of low-end quartz watches was taken up by mainland China decades ago. The average export unit price of Mainland wristwatches is USD 4, only one-sixth of Hong Kong's.

Opportunities Abound in the Mid-Range

The burgeoning middle class in booming economies like mainland China's seeks watch products with better quality and good value that show a sense of personality and fashion through distinctive designs, cultivating new demand in medium- to high-priced watch products.

Market Positioning of Key Exporting Regions

In recent decades, the **Swiss** watch industry has repositioned its markets by making **luxurious and prestigious mechanical watches**, focusing on their symbolic and emotional appeal. Their branding strategies are key to their sustained success on the global watch market.

With the trio brands of Citizen, Seiko, and Casio, Japan has reached top ten in the global watch industry. Japanese manufacturers have long sought to improve product accuracy and reliability, with an emphasis on **quartz watches** which have since successfully dominated the nation's exports.

Mainland China is by far the largest manufacturer and exporter of watches in unit terms, focusing on **mass production of low-priced watches**.

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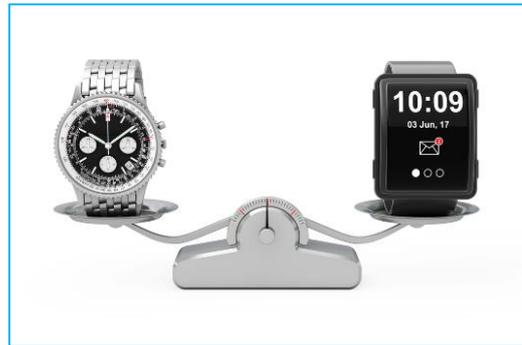
Hong Kong still a Key Player

Watches made by Hong Kong are well-known for their “bang for the buck”, or good quality on the cheap, with creative and stylish designs targeting **low- to mid-end markets**. Local manufacturing capabilities are close to that of their Japanese counterparts; some Hong Kong manufacturers supply watch products to Switzerland.

Ranking just behind industry leader Switzerland at less than half, Hong Kong is the **second largest exporting economy** by value and is followed by mainland China in third place at ~60% of Hong Kong’s export value. In unit terms, mainland China is the largest exporter of wristwatches, more than twice of Hong Kong’s. **Switzerland** ranks third but exports just around **one-tenth** of Hong Kong’s by volume.

Smart Wearables vs. Traditional Watches: Competition or Complements?

Significant growth in the smart wearables market is set to change the overall market structure. Traditional watches may not fit the bill for this digitised world where people look for seamless connectivity, a personalised experience, and health monitoring.



The argument that smart wearables will take over traditional wristwatch markets remains unsubstantiated. Some watchmakers even anticipate potential growth in traditional watch markets, as they believe that **smart watches help inculcate the habit of wearing watches in young people** who will eventually be interested in traditional timepieces.

Growing Importance of O2O Strategy

Online-to-offline strategies (O2O) in e-commerce are increasingly important in watch sales and marketing, as many **offline purchases are influenced by consumers’ experiences on digital channels**. Changes in buyer behaviour suggest that effective sale/marketing strategies in the future hinge on integrating both online and offline channels.



Industry Driven by Emerging Technologies

As demand for quality improvement, specialised functions, and environmental protection rises, WC companies around the world are working to develop new watchmaking materials and technologies.

Developments include **precision** manufacturing technologies to mass produce small watch parts; **new materials** and alloys to meet both aesthetic and functional requirements; and new **surface coatings** for specific applications.

We see growing interest from the industry in **automation, robotics, and artificial intelligence** applications for precise and reliable production of components, watch movements, and complete watches.



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“Swiss Certified” Adds Value: Why Not HK?

Independent agencies certify Swiss watches in various benchmarks, such as accuracy, durability, magnetic and water resistance. These certifications are proof of quality and excellence in watchmaking and chronometry.

In Switzerland, there are several recognised testing and certification bodies for WC products. In Hong Kong, there are commercial laboratories, organisations, research and development (R&D) centres, and universities providing tests on mechanical, material, chemical, electrical, and electronic products/components. However, most of these tests focus on product safety, and there is **no specialised quality certification** for local WC products in the Swiss manner.

“Swissness” not so “Swiss”

In 2017, the new “Swissness” legislation came into force in Switzerland, setting a minimum proportion of Swiss value for industrial products from the previous 50% to 60%. This disturbed the existing supply chain of watch components to Switzerland and shifted manufacturing processes back to the nation, possibly damage the business of some Hong Kong watch components manufacturers.



50% -> 60%

At least 60% of manufacturing costs occur in Switzerland

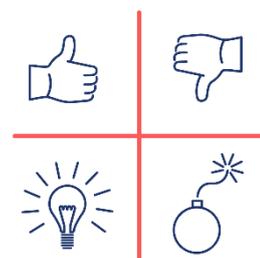


Failure to Develop Talent

The **Swiss** educational system, with its **dual-track vocational education training (VET)** programmes and a successful **partnership network** of schools, industry, and government, offers comprehensive professional and practical training for youths (i.e. apprenticeship) to support the watch industry. This builds recognition and confidence

across society and helps draw students to the industry.

Hong Kong also provides vocational training in horology. However, the programmes offered for the WC sector are too broad and mainly teach the basics. The trade’s **poor image** also hinders recruitment, as **local parents** always **mistook** the industry to involve **low-tech, uneducated, and unskilled labour**, a view utterly at odds with that of the Swiss and the Japanese who hold their watchmakers in high regard as professionals.



Strengths and Weaknesses of the Local WC Industry



Hong Kong is the **world’s largest trading hub** for complete watches, watch components, and accessories. With a strong base in complete watch assembly and watch components manufacturing, Hong Kong supplies a wide range of watch products with **reliable quality and fashionable**

design which comply with **stringent product standards** in performance and safety at **competitive prices**.



However, as other countries innovate in watch materials and manufacturing technologies and



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push the industry forward, Hong Kong's watchmakers are late to the party **in applied research and development (R&D)**.



The **lack of new blood** in the industry is worrying and threatens its future. As the world digitalises, Hong Kong **lags behind** other major cities **in online/offline e-commerce**.

Fortunately, there are potential market sectors in which Hong Kong manufacturers may find opportunities. Hong Kong should target the growing global middle class, on the lookout for quality goods with good value, by leveraging its unique historical and cultural background to **design fusions of East and West**.



The upcoming **smart wearable market** also creates new opportunity for Hong Kong watchmakers looking to diversify.

Local Industry's Views on the Way Forward

There are four areas of concern for WC industry practitioners in Hong Kong:

Product quality and production efficiency

Improve quality and production efficiency through technology advancement and the **automation of key manufacturing processes** and complete watch assembly

More **comprehensive and high-level testing facilities** to support product testing and certification as well as failure analysis

New product development

Looking for opportunities in quality **smart watches** production

Need **testing and technology support** for smart wearables in various disciplines

Branding, sales and marketing

Need a **common e-platform** for online promotion and sales

Keen to collaborate with other fashion products with **cross-over** potential

Explore **IT solutions** for a better **shopping experience**, such as progress updates for watch repairs.

Talent shortage

Reinforce local vocational training with **accreditation** from renowned global training institutes and seek **collaboration with Swiss watch institutes**

Consider other means of training, such as **e-learning platform**, for frontline staff and executives self-learning

Future Positioning and Recommendations

This study identifies four major strategies—**Quality Enhancement, Brand Building, Talent Development,** and **Product Innovation**—to help the Hong Kong WC industry achieve a sustainable competitive advantage.



Six corresponding recommendations are proposed to key stakeholders of the WC industry, including manufacturers, trade associations, the HKSAR Government, industry support organisations, and service providers.

Strategic Planning

	Current Products	New Products
Current Market	Strategy 3: Market Penetration  Talent Development	Strategy 1: Product Development  Quality Enhancement
New Market	Strategy 2: Market Development  Brand Building	Strategy 4: Diversification  Product Innovation



Strategy 1: Quality Enhancement

Make Hong Kong “Asia’s Geneva” in the watch manufacturing sector, with qualified design and manufacturing capabilities.

Recommendation 1

Develop an Impartial Central Laboratory Providing One-stop Services

To add value to Hong Kong watch products, local watchmakers should set a higher product performance target by adopting high-level criteria under international watch standards such as **NIHS, CEN** and **ISO**. However, local SME watchmakers do not have the resources to adhere to these standards and requirements which are regularly reviewed and updated.

This study recommends establishing an impartial central laboratory benchmarking against criteria from renowned **Swiss certification bodies** to provide **one-stop services for quality testing and product certification**. Testing for both traditional watches and new watch products like smart wearable devices should be included.

The central laboratory may also provide **advisory services** on **failure analysis** of watch samples/products, from R&D to manufacturing, to assist local companies in identifying the weaknesses of their products and make continuous improvements. This impartial central laboratory is expected to build a reputation comparable to Swiss testing labs in Asia.





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Recommendation 2

Promote “i4.0” Strategy in the Watch Industry

Industry 4.0 (i4.0) helps with both standardised mass production and heavy product customisation favoured by customers today. The study suggests that the industry should adopt an i4.0 strategy for long-term business development, with more flexible and efficient processes at **high quality and lower costs** through Internet-of-Things (IoT) and data analytics.

To showcase the features and benefits of i4.0 such as self-organising and self-optimising, the study suggests building a **demonstration i4.0 production line for complete watch assembly**, with fast changeover capabilities catering to small production sizes.



The study also recommends robotic automation for specific manufacturing processes in-line with the i4.0 aim for highly customised, small-batch production.

Strategy 2: Brand Building



MADE BY
HONG KONG

Shape Hong Kong-branded/-made watches as lifestyle and fashion products with the best value for money for medium- to high-end markets.

Recommendation 3

Launch a Design Recognition Scheme for Hong Kong Watches

The study recommends setting up a **Design Recognition Scheme** for Hong Kong watch products to capture a bigger share in the growing mid-range markets by promoting their quality and distinctive designs as **fashionable lifestyle commodities** fusing East and West.

The Scheme will select and award watch products with outstanding design, aesthetics, function, and individuality, **showcasing them at various international and regional events** to build up a unique image of Hong Kong watches. **Pop-up stores** will be set up around the world promoting “**Made by Hong Kong**” watch products. An **official promotion channel** on social networking platforms running integrated promotions of award-winning Hong Kong-branded/-made watch products can also be established under the Scheme.



Strategy 3: Talent Development

Develop Hong Kong as a talent hub for the watch industry

Recommendation 4

Establish a Hong Kong Watch and Clock Academy to Develop a Talent Pipeline

The Hong Kong WC industry will not flourish without a continuous supply of qualified and capable professionals. The study recommends establishing a **Hong Kong Watch and Clock Academy** to support talent development in the watch industry vis-à-vis the Swiss training system.

The Academy would not only provide training opportunities on different levels for students to specialise in watch design, production, quality control, repair and maintenance, retail, branding and/or marketing, but also offer **advanced professional development programmes** for practitioners and industry executives to refresh and add to their knowledge.



The training programmes will align with Swiss programmes in cooperation with **Swiss training institutes/companies**. An **e-learning platform** can be established to meet training and development needs for industry practitioners, such as retail and sales staff scattered over various outlets.

The Academy can also help project a **professional image** of the WC industry by offering **awards** and **accreditations** to recognise the effort and achievements of exceptional individuals. Candidates with potential in specific areas may receive extra resources in career development, which can then help them nurture talent in turn and attract more young people to a career in the industry.



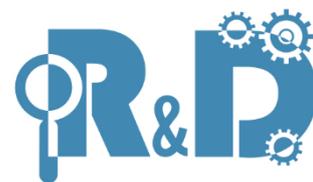
Strategy 4: Product Innovation

Diversify from traditional watches to smart wearables

Recommendation 5

Set up a Hong Kong Horology R&D Centre

Product diversification is intertwined with applying new technologies to new product development. To support SME watchmakers in the city who don't have the in-house resources, the study suggests setting up a **Hong Kong Horology R&D Centre** to focus resources on supporting **design and technology innovation**.



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Potential R&D topics include new materials, sensor technology, advanced surface treatment and coating, precision manufacturing, tooling design, equipment development, and quality checking systems. The Centre can also help promote the adoption of innovative ideas and technologies for new product development and create an **innovative and proactive applied R&D atmosphere** in the industry.

Recommendation 6

Form a Hong Kong Smart Wearables Consortium



The development of smart wearables involves **multi-disciplinary expertise** and technologies, including electronics, medical device, healthcare, and information technology.

The study recommends forming a **Hong Kong Smart Wearable Devices Consortium** to support Hong Kong watchmakers' business diversification by cultivating and promoting smart wearables development through intersectoral industrial cooperation. Business

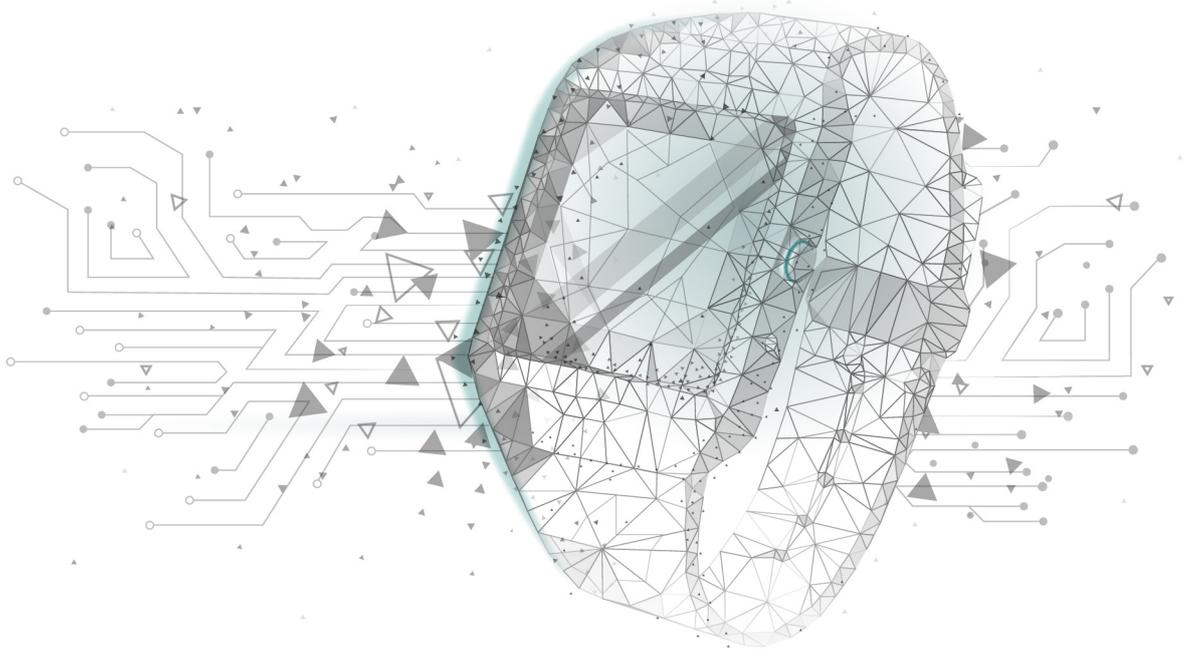


networking events may be organised to kindle **cross-industry cooperation with local watchmakers**.

The target of the Consortium is to develop a new supply chain in the watch industry that will contribute to the sustainable development of the industrial ecosystem across Hong Kong. The Consortium may take the lead to promote and encourage the development of **standard wearable modules** with **bio-sensing technologies** and **standardised testing methodologies** to scaffold the development of smart wearables in the city.

Chapter 1

Introduction



1.1 Significance of the WC Industry to Hong Kong

The watch and clock (WC) industry is one of the four major manufacturing industries in Hong Kong, built from the ground up between 1930s–60s. Industry players from that period were mainly original equipment manufacturers (OEMs) focusing on export markets.

Between 1970s–90s, the industry manufactured electronic movements and became the world's largest producer of digital watches in 1979 to worldwide acclaim thanks to innovative technology, low rents and labour costs in Hong Kong. The industry's business model gradually shifted to original design manufacturing (ODM) due to mounting competition from mainland China.

In the new millennium, many OEM/ODM manufacturers turned into original brand manufacturers (OBMs), selling watches under their own brands.

Seventh Largest
principal commodity group

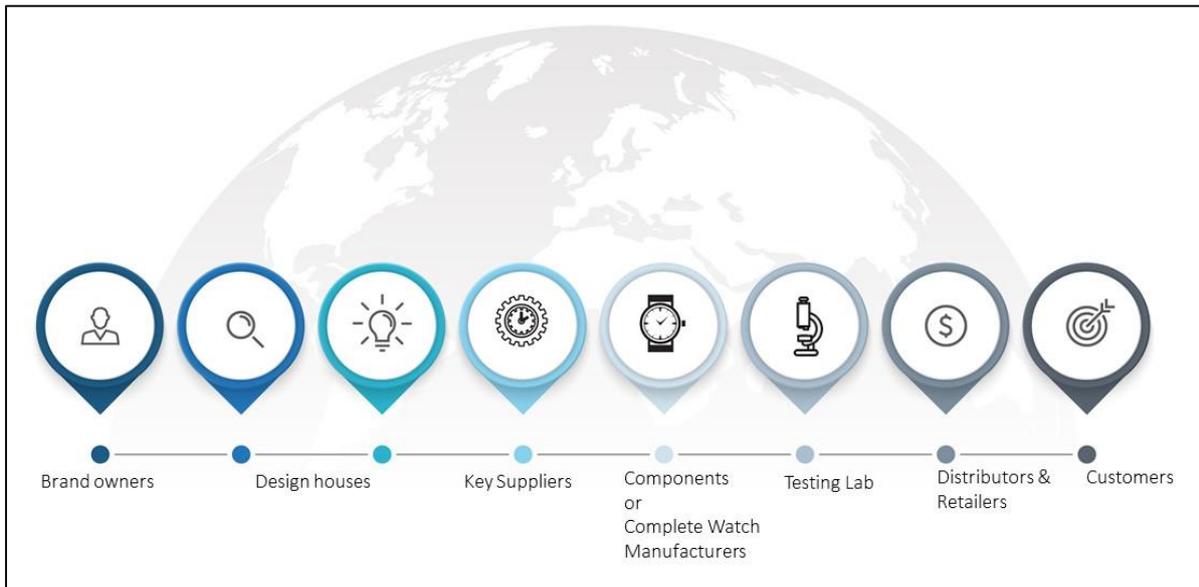
With its prominent role in commodity trade, “watches and clocks” is currently the seventh largest principal commodity group in Hong Kong's total exports, sharing the division with photographic apparatus, equipment and supplies, optical goods¹.

Ecosystem of the Hong Kong WC Industry

In possession of intellectual property rights for brands or trademarks, **brand owners** have the right to produce and sell their products under their own brands. Alternatively, they can legally authorise licensing agents to use the brand owners' work or copyrighted materials to initiate product development along the supply chain.

Next, **design houses** or designers will provide suitable designs of WC products based on the requirements set by their clients, who are brand owners or licensing agents. After detailed design, other **key suppliers** will provide the respective **raw materials** (e.g. plastic, metal, leather, glass, gems), **equipment** or **tools** (e.g. hands setting machine, rate measuring device, machine tools) and handle **special processes** (e.g. surface treatment, electroplating, polishing) to enable works by manufacturers.

Then, **component manufacturers** and **complete watch or clock manufacturers** (OEM/ODM/OBM) will manufacture **partial** (e.g. watch case, dial, hands, and crown) or complete **horological products** respectively.



To ensure product quality, the products will then be sent to **testing laboratories** for chemical, material, and performance tests. Before the horological products reach **distributors and retailers**, marketing and advertising firms will provide value-adding services in product promotion and image building (e.g. advertising, campaigning, and marketing strategy).

Four other parties perform various special roles to support parties along the supply chain:

- The **HKSAR government** formulates territory-wide policies on the industry's overall development.
- **Trade associations** discuss industry support policies with the government and promote industry development/improvement.
- **Technology institutes** and **universities** develop advanced technologies and provide technical support to the industry in areas such as advanced materials, new processing techniques, automation systems, testing, and inspection methods.
- **Training institutes** teach young people knowledge and skills to boost human capital for the industry.

Composition of the Hong Kong WC Industry

Charts 1-1 and 1-2 show the respective values of Hong Kong's imports and total exports of watches and clocks in 2016. **Wristwatches were the most common product for both import and export, comprising over 60% in each.** (Note that watches with cases of precious metals made up less than 30% of imports and 15% of total exports.)

The data imply that **watches with cases of non-precious metals make up the bulk of the local WC industry.** Besides complete watches, Hong Kong companies also supply a variety of parts and components, such as assembled movements, cases, watch straps, dials, and parts for watch cases and bands.

Chart 1-1. Classification of Hong Kong's Imports of Watches and Clocks by value (HKD in million), 2016

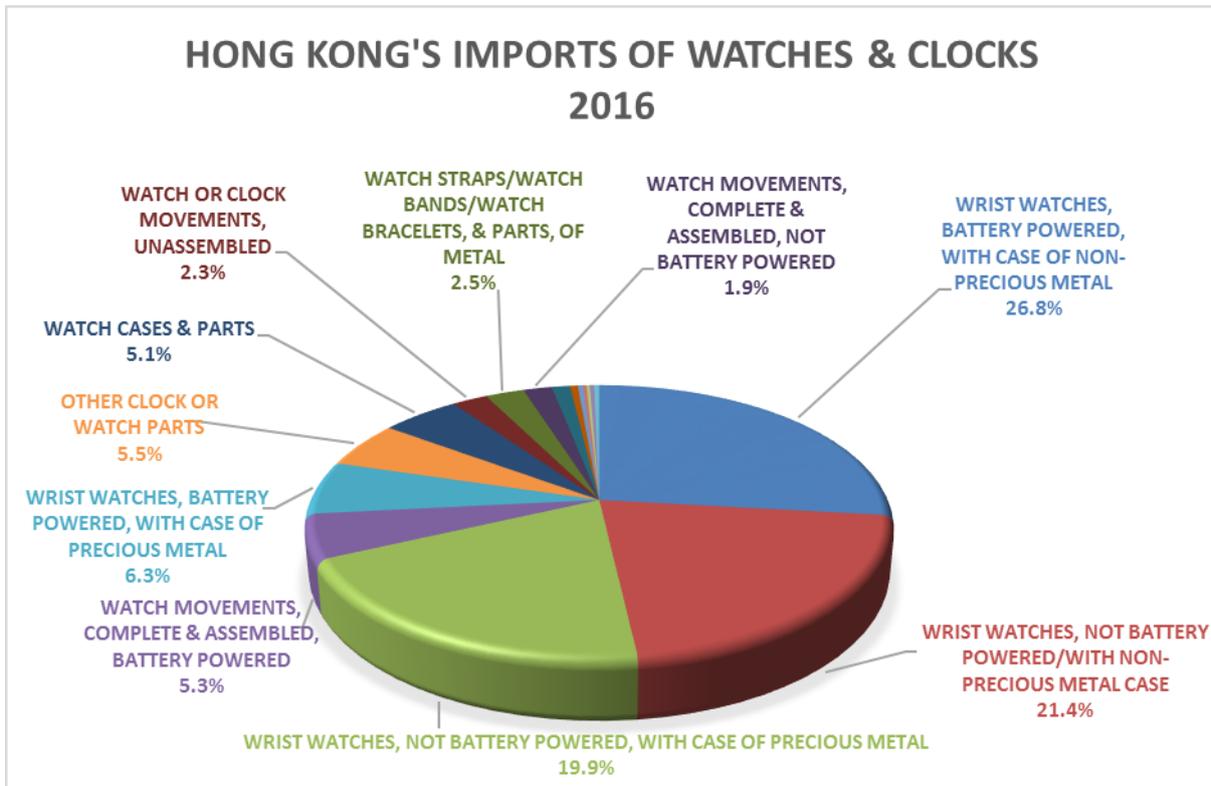
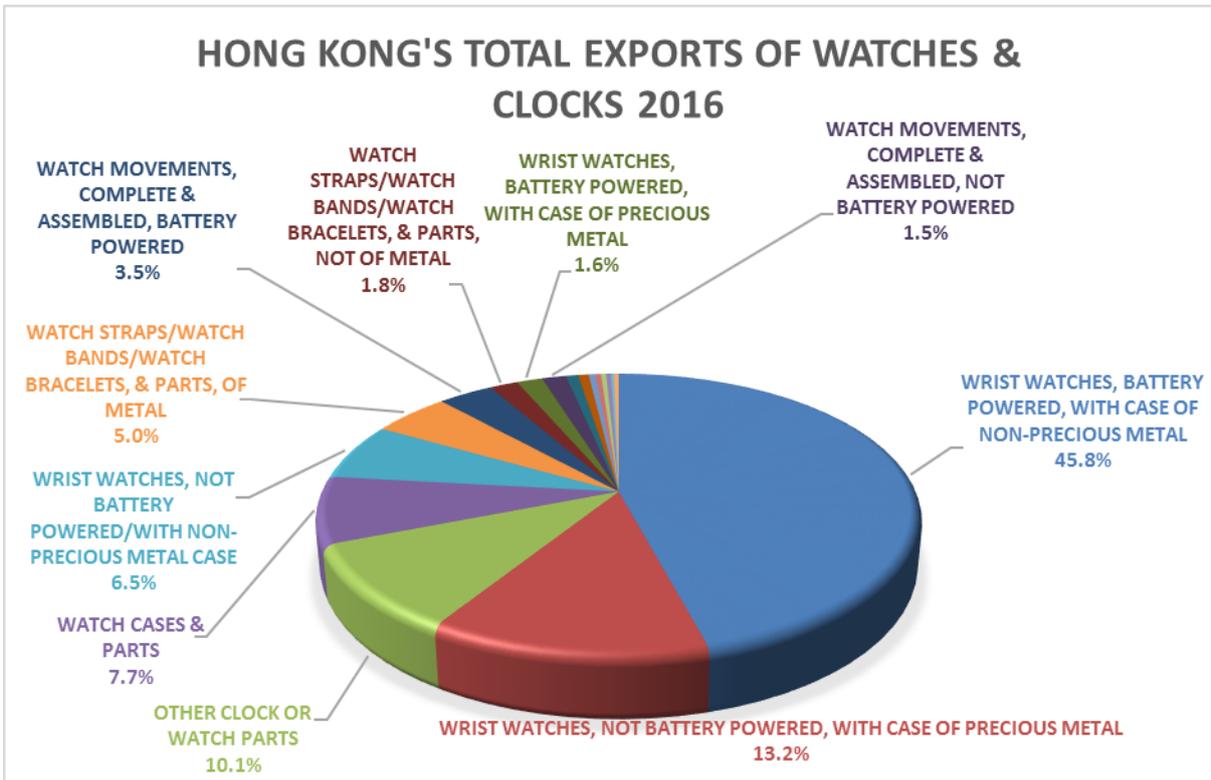


Chart 1-2. Classification of Hong Kong's Exports of Watches and Clocks by value (HKD in million), 2016

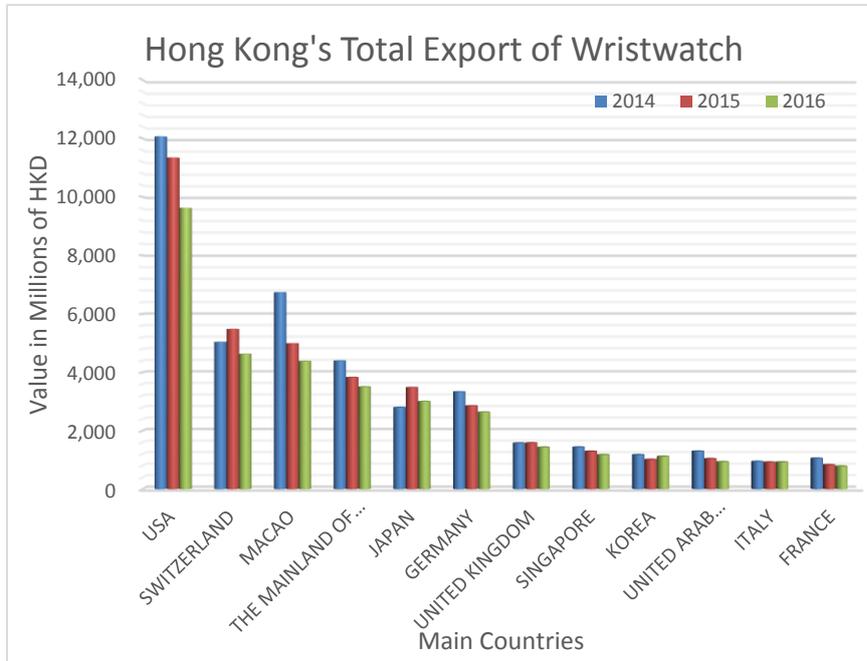




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As shown in Chart 1-3, the United States was the largest export market of Hong Kong's wristwatches, followed by Switzerland with only around half of the total export value. Macao and mainland China were in third and fourth places respectively.

Chart 1-3. Hong Kong's Main Exporting Countries for Wristwatches



Data Source: Hong Kong Trade Statistics, Census and Statistics Department

Key Takeaways

Wristwatches comprise over 60% of imports and exports by value.

Watches with cases of non-precious metals dominate the local industry.

The U.S. is Hong Kong's largest export market.

1.2 Background of the Study

The global WC industry has been in a recession for the past three years. As a key player in the global market, Hong Kong also saw large successive drops in wristwatch exports by value to most of its key markets from 2014 to 2016.

Troubled by this trend, two leading WC associations, the Federation of Hong Kong Watch Trades and Industries (FHKWTI) and the Hong Kong Watch Manufacturers' Association (HKWMA), initiated a meeting with the Hong Kong Productivity Council (HKPC), an industry support organisation, to discuss the industry's concerns.

HKPC was prompted to conduct an industry study and look into the problems, identify potential areas of improvement/development, and formulate directions and strategies for the industry.



Problems



Areas of
Improvement



Strategies

1.3 Objective of the Study

This study aims to identify and develop proactive plans to support sustainable development in the Hong Kong WC industry.

1.4 Methodology and Scope of the Study

Desk research on the market situation of the worldwide WC industry was conducted to identify trends and driving factors, followed by a study on global leading players' characteristics to give a holistic view of the market situation and assess the current positioning of the industry.



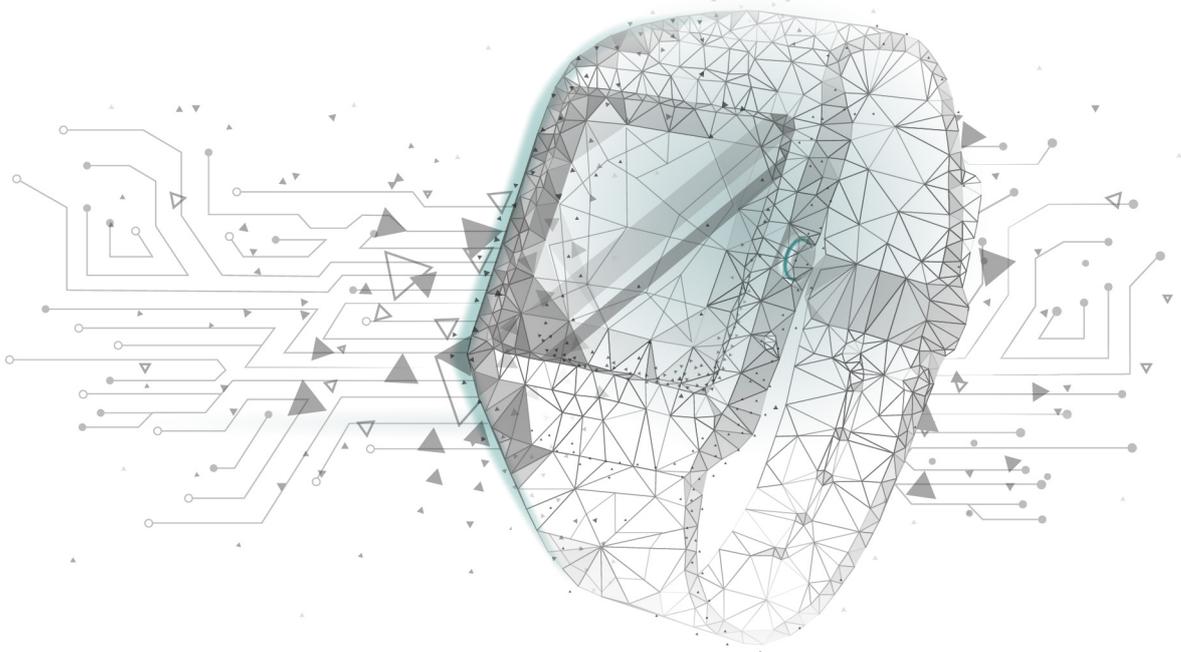
Interviews and surveys with major local stakeholders then gathered first-hand information from experienced business owners and practitioners. **13 key local stakeholders** were interviewed, including **watchmakers, component manufacturers, OEMs, ODMs, licensed brands, brand owners, distributors, retailers, and trade associations.**



It should be pointed out that this study focuses only on **mid-range to lower-end** WC products which take up the bulk of the import/export value, given the extreme heterogeneity of the WC industry. **Luxury watches**, i.e. those with precious stones, will be considered at a later stage as they occupy a market niche with very different manufacturing methods, distribution, and sales channels.

Chapter 2

Industry Overview and Analysis



2.1 Market Trend

2.1.1 Global Market

According to “Watches and Clocks: A Global Industry Outlook”, a report by Global Industry Analysts, Inc. in 2012, the global market for watches was expected to reach USD 46.6 billion by 2017². Market growth was thought to be driven by **three global trends**: recuperation in **demand for luxury watches post-recession, rising popularity of fashionable vintage and innovative models**, and **robust demand from developing markets**, especially Asia-Pacific.

Export Value

The bullish trends in the global horology market were **reversed in 2015**. As shown in table 2-1, the total value for both watches and components from the top five exporting economies dropped by 4.2% in 2015, widening to 12% (YOY) in 2016.

Switzerland, the largest exporter by value, was hit in 2015 which erased the 15% growth it achieved between 2011 and 2014, with further dips in the two years to follow. Runner-up Hong Kong also shaved 4.8% and 11.1% off its export value in 2015 and 2016 respectively^{3,4,5}.

Table 2-1: Total Export of Main Exporting Countries of Horological Products by Value in Billions of USD

	2014	2015	2016
Switzerland	24.3 (+ 1.9%)	22.4 (- 7.8%)	19.1 (- 14.7%)
Hong Kong	10.4 (+ 4.4%)	9.9 (- 4.8%)	8.8 (- 11.1%)
China	5.3 (- 5.2%)	5.8 (+ 9.4%)	5.6 (- 3.4%)
France	2.8 (+ 17.5%)	2.9 (+ 3.6%)	2.7 (- 6.9%)
Germany	2.5 (+ 8.1%)	2.4 (- 4.0%)	2.0 (- 16.7%)
Total	45.3	43.4 (- 4.2%)	38.2 (- 12.0%)

Source: Federation of the Swiss Watch Industry

Export Volume

The drop in export value was accompanied by lowered volumes. Table 2-2 shows wristwatch exports by units from the top five exporting economies. Mainland China was the world leader in 2016, with 652 million wristwatches exported, far more than those of Hong Kong, Switzerland, Germany and the U.S. combined.

While the top five regions saw mild dips of 2.4% and 7.1% in 2015 and 2016 respectively, Hong Kong has taken persistently steeper cuts since 2014.

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Table 2-2: Major Wristwatch Exporting Countries in Unit Terms (million)

	2014	2015	2016
China	669.0 (+ 5.5%)	682.8 (+ 2.1%)	652 (- 4.5%)
Hong Kong	315.1 (- 4.9%)	276.7 (- 12.2%)	241 (- 12.9%)
Switzerland	28.6 (+ 1.7%)	28.1 (- 1.6%)	25.4 (- 9.8%)
Germany	21.2 (+ 8.6%)	21.9 (+ 4.4%)	17.5 (- 20.5%)
USA	9.8 (+ 4.9%)	9.5 (- 2.0%)	10.4 (+ 9.2%)
Total	1,043.7	1,019.0 (- 2.4%)	946.3 (- 7.1%)

Source: Federation of the Swiss Watch Industry

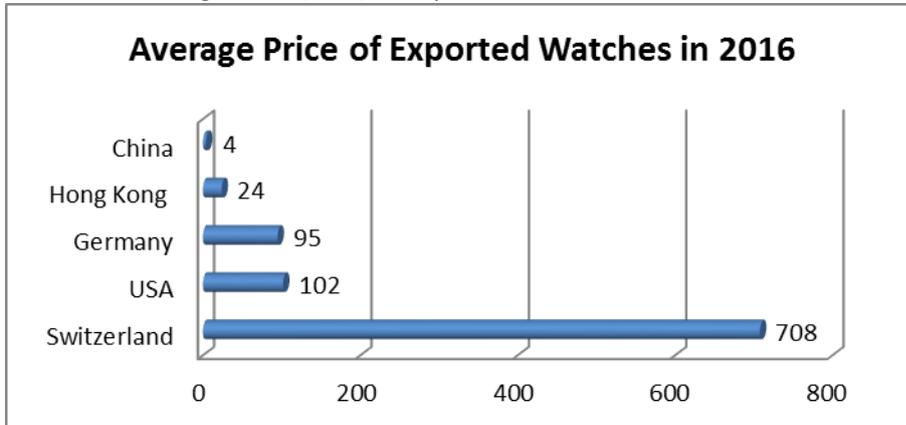
Switzerland, mainland China and Hong Kong took top three in wristwatch exports by value and volume, with Germany also playing an important role as fifth in exports by value and fourth in unit terms. The U.S. was the fifth largest exporter in unit terms, but value-wise it did not make it to the top five. France was fourth in horological exports by value despite exporting less by volume than the U.S.

Average Price of Export Watches

Chart 2-1 shows the average price of exported watches in 2016, which stood at **USD 24** from Hong Kong and **USD 4** from mainland China. Swiss watches led the league at USD 708, albeit at a new low from USD 803 in 2014 to USD 748 in 2015^{3,4,5}.



Chart 2-1. Average Price (USD) of Exported Watches, 2016



Source: Federation of the Swiss Watch Industry

Hong Kong Exports

Table 2-3 illustrates the export performance of watches and clocks in Hong Kong by merchandise value. The dip in re-exports may be due to the drop of Swiss exports as shown in table 2-1. The value of total exports had been decreasing continuously since 2015. In 2016, domestic exports of Hong Kong by value plummeted by 73%, showing that business was dire for local manufacturers even by WC exporting nations' standards.

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Table 2-3. Performance of Hong Kong's Exports of Watches and Clocks

	2015	2016	2017 Jan - May
	HK\$Mn. (Growth %)	HK\$Mn. (Growth %)	HK\$Mn. (Growth %)
Domestic Exports	671 (-26)	182 (-73)	55 (-28)
Re-exports	76,050 (-4)	68,238 (-10)	25,003 (-7)
of Chinese Mainland Origin	42,254 (-2)	38,739 (-8)	13,874 (-8)
Total Exports	76,721 (-5)	68,420 (-11)	25,058 (-7)

Source: Hong Kong Trade Statistics, Census and Statistics Department

Growth of the Smart Wearables Market

Smart electronics, or to be more specific, smart watches, entered the market around 2015; sales have grown ever since.

According to the “Deloitte Swiss Watch Industry Study 2017”, 21.1 million smart watches and 25.4 million Swiss wristwatches were shipped in 2016. **In the first quarter of 2017, smart watches overtook Swiss wristwatches unit-wise, as shown in Chart 2-2.**

Smart watches overtook Swiss wristwatches

Shipments in million units

Q1 2017

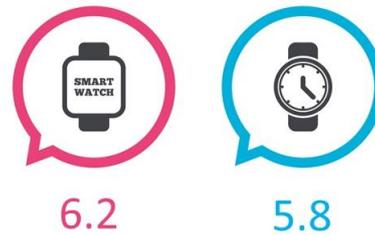
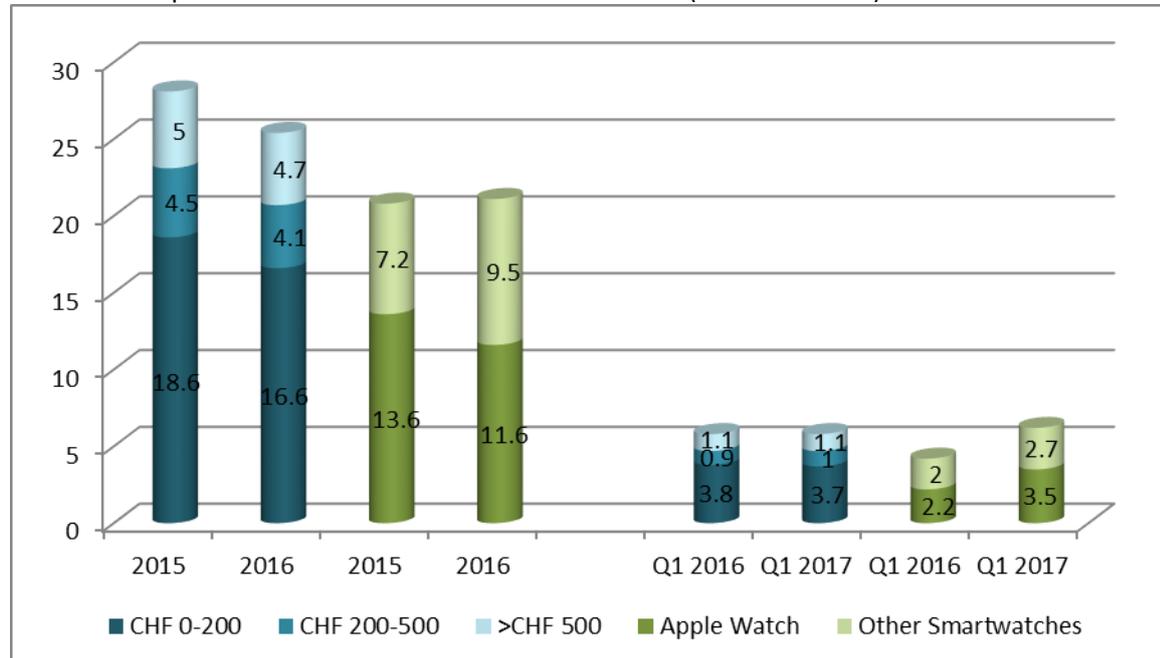


Chart 2-2. Shipments of smart watches vs Swiss watches (in million units)



Source: The Swiss Deloitte Swiss Watch Industry Study 2017, Strategy Analytics

The slight edge in numbers shipped notwithstanding, the sales value of smart watches was still far behind. According to Deloitte’s study⁶, Switzerland shipped wristwatches totalling USD 22.5 billion in 2015, while worldwide revenue from smart watch sales amounted to only USD 5.39 billion in the same year⁷.

Watch out, Hong Kong!

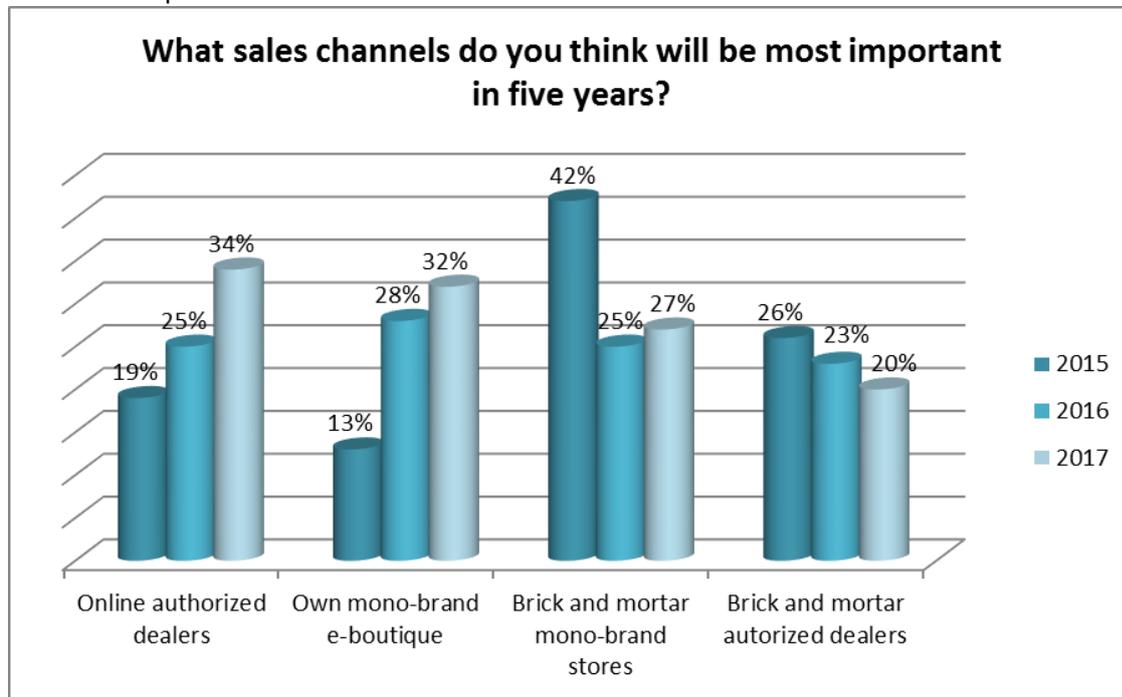
Marketing and Sale Strategies

According to Deloitte's study⁸, "online authorized dealers are expected to be the most important sales channels in five years, with 34% of watch executives viewing them as becoming essential, up from 25% in 2016". Another 32% believed that the most important sales channel in five years would be e-boutiques.



Physical stores were portrayed as increasingly irrelevant, with less emphasis on using authorized dealers as sales channels compared to previous years. Online sales channels continued to grow, with chart 2-3 presenting survey results on the importance of sales channels.

Chart 2-3. Importance of sales channels



Source: The Swiss Deloitte Swiss Watch Industry Study 2017

More than 80% of consumers in Switzerland used digital devices before, during, or after shopping at physical stores to search for product information or check stock availability. At the same time, **more than 90% of total retail sales still took place in brick and mortar stores⁶.**

Review Summary

The sizable cutback in Swiss wristwatch export, both by value and in unit terms, and the continuous fall in average price of Swiss exported watches suggest a contraction of the luxury watch market in recent years.

Watch out, Hong Kong!

Consultant Bain & Company⁹ notes that “the rise of e-commerce and global tourism growth created greater transparency around international price differentials”. While customers seek quality products with good value, “**price-conscious luxury shoppers are struggling to reconcile the price of luxury products with their real value**”, pushing down Swiss watch prices since 2015 with further pressure in 2016. Given the dwindling luxury market, this may not be a good time to invest in high-end products.

Price-conscious shoppers struggle to reconcile the price of luxury products with their real value.



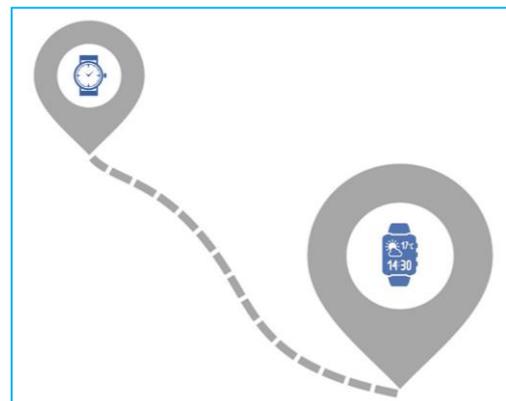
Meanwhile, **the average export value of mainland Chinese wristwatches is only one-sixth of Hong Kong’s**. Mainland China dominates the low-end watch market at a three-to-one volume ratio to Hong Kong. It would be **extremely difficult for Hong Kong watchmakers to compete with the mainland in low-priced markets**.

Watches made by Hong Kong are well-known for their “**bang for the buck**”. Bain’s study states that the **growing middle class in booming economies**, like that of mainland China, is shopping for watches with good quality and good value. Hong Kong watchmakers are fully capable of supplying more quality watches at competitive prices to the global market in future. The difference in the average prices of exported watches between Switzerland and Hong Kong also implies that the latter can narrow the gap by adding value.

While the export slump in traditional watch market coincided with the **rise of the smart watch**, there is still no compelling case for the new surpassing the old. The Swiss watch industry does not even see smart watches as a threat to its business, and the decrease in Swiss exports can be explained by a decline in market demand from Hong Kong and mainland China, a strong Swiss franc, and global uncertainties.

Notably, **people under the age of 50 are much more likely to buy a smart watch**⁵. Smart watches should be a foot in the door for young people to garner an interest in timepieces.

Some **Swiss brands have also entered the smart watch markets, offering young buyers an entry point to their brands** in hopes of enticing them with high-end mechanical watches once they have grown attached to the brand image. Hong Kong watchmakers need not brace themselves for the emerging crisis that is smart watches, but rather seize the opportunity to develop business, diversify, or transform.



E-commerce has exploded in global consumer markets in this decade. With plenty of Internet users, **mainland China has become the de facto e-commerce leader in the Asia-Pacific region**. More and more watch merchants are allocating more resources in managing their online business, promoting over social media, and developing websites to increase product exposure and brand awareness.

Watch out, Hong Kong!

Physical stores remain the main distribution channel for watch sales in Hong Kong; some local players struggle to expand their online business due to uncertainties such as authenticity and quality issues. An online platform does not guarantee a seller's trustworthiness or the



authenticity of a product, but an **accredited B2C online platform** for watches and accessories may help local online businesses develop and grow.

The majority of the budding online trade is still of low- to mid-end watches. **High-end watches are seldom sold online due to authenticity issues.** It is also difficult to monitor and curb forged products emerging in online markets.

Online retail pricing models are completely different from traditional ones. Middle- or high-end **watch brands normally do not use third-party online platforms, but via their own official websites or instant messaging through social media.**

Consumer behaviour has been changing over the years, especially in transient fashion or high-value products. **Online-to-offline (O2O) experiences** (i.e. search online but buy offline at physical shops) is an emerging trend in today's retail business, especially for **mid-range and high-end products. Most watch retailers and distributors agree that e-commerce or Internet sales have become more important** because it is an effective platform for sales, brand awareness promotion as well as product exposure.

However, **many local OBMs still use physical stores as their core sales channel for luxury and mid-range watches.** Some locally licensed brand agencies, long reliant on their national distributor networks, have explored O2O in recent years. Some brands now sell low-end products via official websites, social media channels, or e-commerce platforms, but much potential remains to be explored.

In short, varying price-dependent customer demand, a surge in new watches, changing consumer behaviour, and emerging online marketing and sales channels are central to the WC industry in coming years. It should develop an industry-wide strategy in response to these market changes in order to sustain its business.

2.1.2 Characteristics of Key Exporting Regions

Switzerland



The history of the Swiss watch industry dates back to the mid-16th century. For more than four centuries, tradition, expertise, advanced technology and innovation have supported the Swiss WC industry's role as a global leader.

The reputation of Swiss made watches is unrivalled. The 'Swiss Made' allure conjures up an image of quality, credited to rigorous testing and quality assurance managed by Swiss companies.

While all watch brands conduct product quality testing in-house to make sure their watches work well, some of them (including the biggest manufacturers by volume like Rolex, Omega, Tissot and Breitling) also seek **external certification** such as the **Official Swiss Chronometer Testing Institute (COSC)** and **Geneva Seal** as proof of watchmaking and chronometric excellence.

Living through the Quartz Crisis (the dawn of the quartz watch in the 1970s), the Swiss watch industry **restructured itself and repositioned its strategy in high-value markets in the mid-1990s**. The Swiss watch industry succeeded in identifying new selling points targeting the symbolic and emotional aspect of the product (e.g. aesthetics, technical know-how, brand reputation), rather than traditional timekeeping functions. In export sales value, the Swiss watch industry ranks first in the world. **At the company level, three Swiss watch and luxury groups, Swatch Group, Richemont, and Rolex, lead the world market, accounting for around 45% of global watch sales¹⁰.**

Over time, mechanical watches have become prestigious luxury items. Table 2-4 shows the export figures of Swiss mechanical and electronic watches, with the value of the former going from similar levels to quadruple that of electronic watches from 2000 to 2016.



Watch out, Hong Kong!

Table 2-4. Exports of Swiss Watches: Electronic and Mechanical

	Electronic		Mechanical		Total	
	Units ('000)	Value (Mil of CHF)	Units ('000)	Value (Mil of CHF)	Units ('000)	Value (Mil of CHF)
2000	27,180	4,862.4	2,476	4,414.1	29,656	9,276.5
2005	20,996	4,295.6	3,368	7,122.1	24,364	11,417.7
2010	21,210	4,229.7	4,939	10,924.7	26,148	15,154.4
2015	20,325	3,978.9	7,812	16,259.1	28,138	20,237.9
2016	18,433	3,591.5	6,963	14,655.6	25,396	18,257.0

Source: Federation of the Swiss Watch Industry

Japan

Japan is within the top ten in the global watch industry. Although lagging far behind the top three in terms of value or volume, the Japanese watch industry remains influential in the global market, particular to Hong Kong's counterpart.

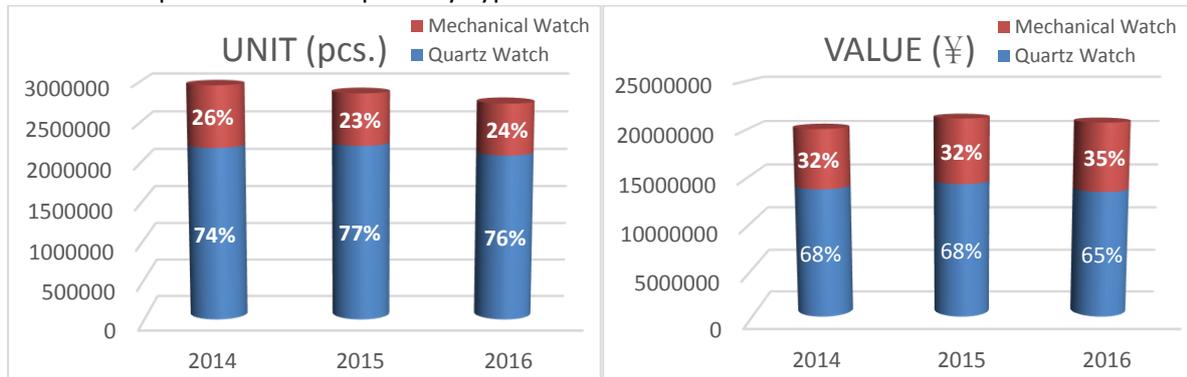
At the company level, the three Japanese groups, **Citizen**, **Seiko**, and **Casio** are heavyweight players in sales terms along with the Swiss. In 2016, they were among the top ten largest global watch manufacturers, with a market share of 3.9%, 3.4% and 2.1% respectively¹⁰.



The world's first quartz watch was launched by a Japanese watch manufacturer in 1969¹¹. By 1978, the roaring quartz trade overtook mechanical watches in popularity, bolstering the Japanese watch industry.

Today, **quartz watches still dominate Japanese watch exports**, taking up over 75% of units and 65% in value, as shown in chart 2-4.

Chart 2-4. Japanese Watch Exports by Type



Data Source: Ministry of Finance Japan

Japanese manufacturers have long concentrated on improving accuracy and reliability. Today, they also focus on creating products that help conserve global resources and protect watches from hostile environments.

In particular, their flagship watches come with an **automatic power generating system** (self-

Watch out, Hong Kong!

winding quartz watch), a robust **solar power** system, radio-controlled or satellite/**radio-controlled**, or hypoallergenic materials. Some Japanese watches are synchronised with the GPS network and adjust the time zone at the touch of a button.

The Japanese watch industry has a close relationship with its counterpart in Hong Kong, having first set up manufacturing plants and sourced for components in the city since the 1980s. Hong Kong watch and component manufacturers have learnt a lot from their stringent quality management systems, product features, and advanced production technology.

Mainland China



Mainland China is by far the largest manufacturer and exporter of watches in unit terms, heavily leaning towards mass production of low-priced watches.

99% of in unit terms and 96% by value exported from the Mainland are attributable to quartz watches made from non-precious metals or other materials (primarily plastics). With an **average export unit price of USD 4**, they are much cheaper than Swiss watches⁵.

China-made watches have relatively low added value. Leading global watchmakers invest heavily in R&D to maintain their edge, and efforts in innovative technology and product development in the Chinese watch industry pale in comparison.

In the global watch market, quality, branding, and product design are vital to market share and profits. Mainland China may be the largest watch producer in the world, **but Chinese watch brands still have a long way to go to compete with Swiss brands** in terms of reputation and brand value.

Hong Kong

In Hong Kong, the WC industry rests on the strong foundations of three sectors: importers and exporters; wholesalers and retailers; and watch and components manufacturers.

Hong Kong is the world's largest trading hub for complete watches, watch components, and accessories. The latest available statistics¹² show that Hong Kong was the **world's largest importer of complete watches** and the **second largest exporter of complete watches and complete clocks**. As shown in chart 2-5, nearly 70% of establishments in the Hong Kong WC industry were exporters and importers of watch products, with over 12,000 local employees.

The largest export item was battery-powered wristwatches with cases of non-precious metals, accounting for 45.8% of the total exports in 2016¹³, followed by battery-powered wristwatches with cases of precious metals at 13.1%.

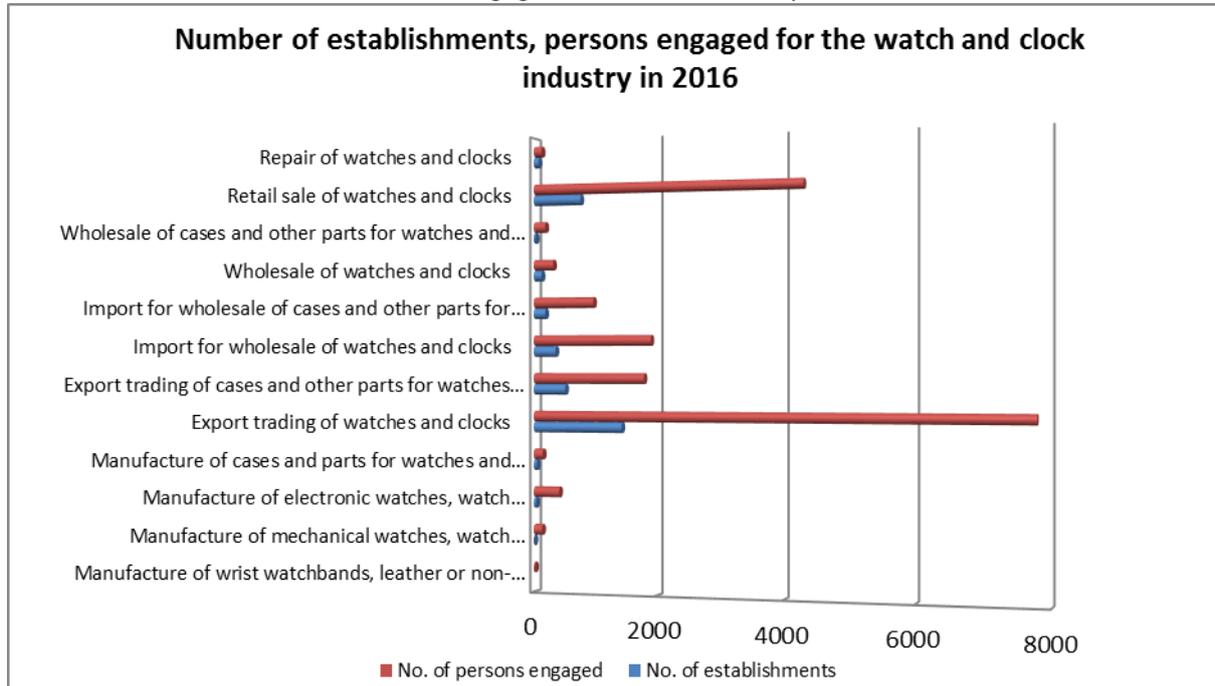
Other major export groups were various **WC components**, such as cases, watch straps, complete and assembled movements, dials, and parts for watch cases and bands.

Hong Kong, ever a shopper's paradise, has attracted several well-known watch brands to set up their sales operations. As shown in chart 2-5, wholesalers and retailers accounted for 26%

Watch out, Hong Kong!

of all establishments in the Hong Kong WC industry, employing nearly 5000 people.

Chart 2-5. Establishment and Persons Engaged for the WC Industry, 2016



Data Source: Hong Kong Trade Statistics, Census and Statistics Department

The manufacture of complete watches and watch components is also a crucial part of the Hong Kong WC industry. According to “Watches & Clocks Industry in Hong Kong” by HKTDC¹², “Hong Kong has established strong ancillary and supporting industries for its watches and clocks manufacturing. Local watch assemblers are well served with a variety of high quality watch cases, dials, watch straps, hands, button cell batteries, crowns, electronic parts and other accessories.” However, as shown in chart 2-5, only 3% of WC industry establishments were “manufacturers”. (The figure may not be wholly representative, as it only included local establishments.)

The Hong Kong Watch Manufacturers Association counts over 550 members engaged in manufacturing WC products and related supporting services¹⁴. Most manufacturers have relocated labour-intensive processes to mainland China to reduce costs, with only a few maintaining part of their production bases in Hong Kong for higher valued products. Most companies may only have their design, sales and marketing, and/or trading offices in Hong Kong, with their major production plants in mainland China.

Most Hong Kong firms focus on OEM and ODM production, but a few have branched out into OBM. The major OEM customers are **importers** and **distributors** in the U.S., the EU, and Japan. ODM involves both design and production and is mainly embraced by customers in mainland China, Southeast Asia, and other emerging economies. Several Hong Kong companies make and sell watches under their own brands, including MEMORIGIN, Temporis, and odm. Others have **acquired overseas brand names** to extend their marketing and distribution network, and/or to access better technology and designs. Successes include Oregon Scientific from the U.S., SULTANA from Switzerland, and ENICAR from Switzerland.

Over the years, the Hong Kong WC industry has been serving the **low-end to mid-range**

markets. Hong Kong watch products are well-known for excellent quality at bargain prices. They are reliably made, fashionably designed, and compliant with stringent product standards in performance and safety. There is great potential for local watchmakers to add value to their watch products through even better product quality, more personalised features, and distinctive designs.

2.2 Technology Trend

2.2.1 Technology for Traditional Watches

Like other products from the age of inventions, timepieces began with mechanical movements before they were gradually electrified.

Precision Manufacturing

Generally speaking, a **mechanical watch is of greater value than an electrically-powered watch** even though the latter is more accurate at timekeeping. This may be attributed to consumers' **higher perceived value** of the complex gear transmission design, precision fabrication of miniature parts, and delicate assembly workmanship of a mechanical watch which pushes chronometric precision engineering to its limits.



Figure 2-1. Equipment for precision manufacturing

The production of quality mechanical watch movements is dominated by Swiss manufacturers which only supply to Swiss watchmakers under the same group. Few Hong Kong manufacturers can produce mechanical movements.

Precision fabrication processes have matured as the technology improved. Artisanal manual fabrication of

small parts has been replaced by precise machine tools. In the 1990s, Swiss and Japanese manufacturers began using moulding technology to mass produce watch cases¹⁵, gradually acquiring the capability in **precision moulding technology** to do the same with miniature and precise parts for watch movements.

Precision technology know-how takes time and effort. Hong Kong manufacturers have proactively adopted various precision machinery for mass production of watch straps, dials, and parts for watch cases and bands. One such watch manufacturer established a precision stamping production line, bearing out high-volume production possibilities for precision watch components. However, most precision machinery used by local manufacturers is



Watch out, Hong Kong!

bought from Europe and Japan.

New Materials

Watches of the past had a metallic aura, while clocks were cased in timber. Modern timepieces feature a more varied palette: apart from precious metals for luxury watches, common metals such as stainless steel, brass, titanium, and aluminium are widely used in watch production.

Other materials are adopted in different components, like plastics, glass, sapphire, ceramics, carbon fibre and silicone rubber. However, advanced technology is needed to process these new types of materials to the precision levels required of horology.

Plasma treatment can be used to alter the surface properties of various non-metallic watch components such as silicone rubber and plastics. Typical modifications include surface roughness, anti-static, anti-dust, hydrophobic, and hydrophilic properties.

Metallic glass promises to be a new and unconventional material for the watch industry. It is extremely hard and tough and capable of storing energy thanks to high elastic energy storage per unit volume. This makes it highly suitable for external and internal components alike, especially energy storage components in mechanical watches.

Ceramic materials also inspire new designs for luxury watches. However, conventional manufacturing processes are complicated, making it hard to reach the required precision levels. New manufacturing technologies such as **powder injection moulding** and **3D printing** may be the answer to high-precision ceramic components.

Many renowned designers and brands are constantly developing their own **brand-specific alloys** for their designs, often not only for aesthetic appearance but also better and longer operations without needing maintenance. Some are designed to be lightweight for more comfortable and easier wear. Others are designed to be stronger which is reflected in the performance and appearance and ultimately value of the timepiece. However, these brand-specific alloys are usually **closely guarded secrets**. Most local manufacturers cannot develop their own alloys to improve their products.

Watch out, Hong Kong!

Surface Coating

Apart from the precision of movements, the appearance of a timepiece has always been charged with an aesthetic air. Cases were polished to showcase elegance, and sometimes gemstones were set to emphasize the charm. Surface coatings can deliver the desired physical appearance and characteristics for added appeal and durability.



The application of coatings is no longer limited to the watch head and band and is now used on the crystal and internal components. For example, **Super Anti-Reflective (SAR) Coating** suppresses reflection by 99%, with such superb visibility that wearers doubt the crystal is really there. Multi-layer coating is more resistant to scratches than conventional coating. **Stain-proof coatings** on the watch head, crystal, and band improve water repellent properties as well as resistance to stains.

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM) developed a novel **anti-fingerprint nano-coating**¹⁶, rendering fingerprints left on the surface virtually invisible.



Silver and rose gold are popular colours in the luxury watch market, but are prone to oxidation and tarnishing in the ambient environment, hence ongoing demand in **anti-tarnish coating** technology for precious metal components.

Different types of coating technologies serve different applications and functions. Physical vapor deposition (PVD) coating technology has been applied to watch cases and wristbands for over 20 years, with new developments against the latest requirements. Demand for **super-hard coatings** such as titanium aluminium carbonitride (TiAlCN), tantalum carbide (TaC), titanium diboride (TiB₂), and boron nitride (BN) remains strong. The industry has also embraced conventional hard PVD coatings over 2 microns thick to improve the durability of luxury watches. These hard coatings can be taken a step further with **surface hardening technologies** such as plasma nitriding and ion implantation to enhance product value and durability.

Besides hard coating protection, **decorative PVD coatings with exceptionally sharp and stable colours** are another hot field in coating materials and processes. Recent development trends in stable colour coatings include bright blue, rose gold, champagne gold, deep sea blue, and white.



Figure 2-2. DLC coating improves durability and energy transmission

Diamond-Like-Carbon (DLC) coating is a special type of functional PVD coating for external and internal components alike, with excellent **hardness and low friction** to limit external wear and improve coating durability. In internal components (especially a mechanical movement), a DLC coating improves durability and energy transmission by **reducing friction loss**.

DLC coating development can also lead on to achieving a **special tools grade coating of tetrahedral amorphous carbon (ta-C)** (up to 5000 HV on the Vickers hardness test, 2.5 times of ordinary DLC) for excellent wear resistance and durability.

Atomic Layer Deposition (ALD) is an emerging technology which deposits atoms on a substrate layer by layer, forming a **well-controlled thickness of conformal coating**. The fully covered, pinhole-free coating can be applied to the outmost layer of components with or without undercoating to protect the base from tarnish and oxidation. It is especially suitable for internal watch components such as dials and hands which need an ultra-thin coating to protect the shine without affecting its original colour. Many tiny mechanical components can be coated by ultra-thin ALD to reduce wear and tear without affecting their precise dimensions.

Automation

Automation is replacing most manual craftsmanship in watchmaking, especially for low-end and mid-range products. Craftsmanship has been critical to Swiss Made mechanical watch precision from their inception, with shoddy work resulting in disastrous errors in mechanical watch movement.

Technology has made automation possible in the 20th century in standalone parts fabrication stations and component assembly lines. While the majority of traditional Swiss watches are hand-made, **a Swiss manufacturer of mechanical movements (one of the largest in the world) has developed a movement which is entirely assembled by automated systems**¹⁷. The movement is made of 51 simple parts with a weight that winds the mainspring. Instead of a regulator, the **special escapement is set by a laser** during production, as the movement is hermetically sealed inside the case to keep out moisture and dust and non-serviceable.

Automation is common in the Japanese watch industry. While most Swiss watches are hand-made with sophisticated expertise and extreme precision, three of the most prominent Japanese watch manufacturers have set up automated assembly lines for movements; Seiko has been automating watchmaking processes for 20 years.



Watch out, Hong Kong!

With government support, **Seiko** spent 10 years developing an automatic assembly line for movements, carried out on a 30m straight track with some 20 stations. Four lines work in parallel, each working in 7.5-hour shifts with a net cycle of 2.7 seconds¹⁸. The **movement** itself is now **assembled 90% automatically**, and productivity increased by **over 20%** from 2012 to 2013.

Other human operators carrying out key operations in case assembly (where the movement, face and hands are installed in the case) are now being replaced by robots, improving productivity and quality consistency with minimal compromise in precision.

As labour costs rise continuously and recruiting skilled workers becomes more difficult, **Hong Kong watch manufacturers are also pursuing automation**. Apart from using standalone precision automated machinery in parts fabrication, a local factory has set up a semi-automated production line integrating a **vision inspection system** and a **water leakage testing system** into the end. This **automatic quality checking system** safeguards the performance of every single product, but this type of integrated automation line with built-in intelligence is still uncommon among Hong Kong manufacturers.

Environmental Awareness

As customers become more aware of the environmental impact from their purchases, **using environmentally friendly materials in watchmaking will be an important way to add value to the products**. Electronic components in a smart watch contain hazardous materials. Once landfilled, leachate containing acidic metal ions will remain for over 100 years and pose a risk of leaking from insulation lining and polluting nearby soil. Environmentally responsible brands select recyclable materials in tandem with new recycling tech.

One famous international smart watch brand offers to recycle their products for its customers in pursuit of a zero-landfill policy, in turn cultivating its brand image by demonstrating its commitment to environmental protection.

Certification of Testing Services in Switzerland – Product Quality

Many watches are certified for various benchmarks such as accuracy, durability, anti-magnetism, and water resistance by independent agencies as proof of quality and excellence in watchmaking and chronometry.

Swiss Made watches are widely recognised as the most sophisticated timepiece, and the word “Swiss Made” is synonymous with impeccable quality. Unsurprisingly, Switzerland is the leader in testing and certification of complete watches. All Swiss watch brands conduct in-house product quality testing to make sure their watches work as they should. On top of the in-house quality assurance, some go the extra mile to get their watches certified by independent external bodies¹⁹.

There are four major independent external certification bodies in Switzerland:

1. *Contrôle Officiel Suisse des Chronomètres* (the Official Swiss Chronometer Testing Institute, COSC)
2. Chronometric+ Observatory
3. *Poinçon de Genève* (Geneva Seal)
4. *Fondation Qualité Fleurier* (Fleurier Quality Foundation, FQF)

Watch out, Hong Kong!

	COSC	Chronometric+	Geneva Seal	FQF
Geographical Requirement	Swiss made (60% of value)	Swiss made (60% of value)	Geneva assembled, adjusted and cased-up	Swiss made (in entirety)
Level of Criteria	Mass market	Wider market	Special market	Special market
Nature of Certification	On-going assessment	Individual watch	Sample movements of each type	Individual watch
Testing	1 in over 800,000	Internally tested by watch brands	Individual watch tested by watchmaker	Individually certified
Surprise Audits	N/A	Several times per year	At least 12 times per year	N/A
Test Criteria	ISO 1359 Chronometer	ISO 1359 Chronometer Water resistance Magnetism resistance Power reserve Timekeeping on wrist	ISO 1359 Chronometer Functional quality Movement finishing	ISO 1359 Chronometer Chronofiable (incl. Fleuritest) Production Movement decoration

Certification of Testing Services in Hong Kong – Product Safety

In Hong Kong, there are commercial laboratories, organisations, R&D centres and universities that provide testing support for the watch industry.

In general, the commercial laboratories (such as ITS, SGS, STC, TUV, and UL) and organisations (such as CMA and HKPC) **only provide certification services for import regulations in different markets**. These certification tests are usually for **product safety** or **environmental protections**, such as Restriction of Hazardous Substances (RoHS); Registration, Evaluation, and Authorization of Chemical Substances (REACH); and Electromagnetic compatibility (EMC) for the EU market; and California Proposition 65 (Prop 65) or FCC tests for the U.S. market.



Figure 2-3. EMC Testing Chamber



Figure 2-4. New Proposition 65 Warnings

The Standards and Calibration Laboratory (SCL) is a government-owned laboratory under the Innovation and Technology Commission of the HKSAR Government. It is responsible for maintaining the reference standards of physical measurements for Hong Kong. SCL provides calibration services to the rate measurement instruments, magnetic flux density meters, atomic clock, EMC and other apparatuses in support of the watch industry. SCL is accredited

Watch out, Hong Kong!

by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) and implements a management system that complies with HOKLAS regulations and the requirements of ISO/IEC 17025 for calibration services.



Figure 2-5. Calibration of Watch Testers



Source: Standards and Calibration Laboratory

Product Testing Services in Hong Kong

Jointly steered by HKPC and the Hong Kong Watch Manufacturers Association, the Hong Kong Watch and Clock Technology Centre (HKWCTC) was established in 1995 under the Innovation Technology Fund of the HKSAR Government. HKWCTC is a testing laboratory specialising in WC product testing, with technical support from Laboratoire SA and Chronofiable SA of Switzerland. HKWCTC has also developed tests for watch movements, components, and subassemblies. The Centre mainly provides performance tests in physical, chemical, mechanical, and environmental aging, such as water resistance test, magnetic field resistance test, shock resistance test, and abrasion resistance test. HKWCTC is accredited by HOKLAS and implements a management system that complies with HOKLAS regulations and the requirements of ISO/IEC 17025 for water resistance tests.



Figure 2-6. Movement component measurement equipment

During the past 20 years, HKWCTC has performed over 10,000 tests for the industry. However, most of the equipment is becoming outdated. Many Hong Kong manufacturers and testing labs located in mainland China already have the equipment to perform most of the mechanical tests, while other labs in universities, R&D centres, and even in HKPC provide customised tests for product research and failure analysis. HKWCTC seems to be playing a diminished role in supporting generic testing of WC products.

Watch out, Hong Kong!

Although there are a lot of testing facilities in Hong Kong, **no specialised quality certification exists for WC products** along the lines of the Swiss CSOC, Geneva Seal, or FQF Seal. Establishing a **local certification service and product quality excellence scheme** will certainly add value to Hong Kong watches and components and differentiate them from those of lower-end competitors.

2.2.2 Smart Watch

Mechanical, quartz, and electronic timepieces may have dominated the market in the past, but the Internet and mobile networks have given birth to a new market of smart devices, with the smart watch being one of the more recent examples. Traditional watches hardly satisfy market demands in a digitised world where few escape from the grid. Without compromising on timekeeping precision, smart watches excel in four aspects, namely awareness of the physical environment, connectivity to society, personalised experience, and health monitoring.

Awareness of the Physical Environment

Multiple sensors are embedded in a single smart watch to detect data from the physical environment for the user, such as temperature, humidity, ambient light, air pressure, and magnetic field. Integrating the Global Positioning System (GPS) into a smart watch has also become a major trend, allowing the computation of tide times and times of sunrise and sunset.



Figure 2-7. Smart watch combines GPS with barometric altitude

and text-to-speech interfaces to create the façade of an artificial intelligence (AI) personal assistant for extra functionality. Meanwhile, a Hong Kong company developed smart watches with the ability to make contactless e-payment, connecting the physical and digital worlds.

Battery capacity and charging speeds have become a major battlefield among smartwatches suppliers, as users expect minimal device downtime during charging.

Connectivity to Society

Watches have become a ubiquitous item and everyday wear. While you may put aside your mobile phone once in a while, it is rarer to take a watch off in the middle of the day. A smart watch harnesses the close bond with its user to take over the functions of a smart phone.

Bluetooth and Wi-Fi are key to a smart watch's hook onto the digital world. One globally renowned brand installed speech recognition



Figure 2-8. Smart watch connected with smart phone

Watch out, Hong Kong!

Personalised Experience

Smart watches are slated to provide increasingly personalised experiences to users. Libraries of watch face templates are available to customers on company websites which let users change watch faces anytime. Some brands offer interchangeable watch bands for users to match their watch heads. Crossover watch bands with well-known fashion brands are well-received as collectibles.



Health Monitoring

Monitoring personal biometrics is another popular function in smart watches. Some give insights on the physical condition of users, measuring exercise intensity, and track user activity (e.g. standing, moving or exercising). Sensor readouts are matched with a database of exercise types such as cycling, running, rowing, gym workout, and high intensity interval training. Calories burned can be calculated with a heart rate sensor. Users can share and discuss their fitness achievements with friends and compete for better health.

Among all value-added functions of smart wearables, those related to health and fitness are most ripe for development, with great market potential for crossover to healthcare products or functions targeting seniors.



2.3 Government Policy

2.3.1 Enforcement of Anti-Corruption Regulations

Government policy plays an indirect but important role in the watch market, especially in Asia. As with other traditional societies, gifts are a token of care and blessing in China with a long history of ritualistic exchange. However, luxury gifts may rub the public the wrong way which associate the behaviour with bribery and corruption. The implementation of Chinese institutional reforms in 2012 curbed an expanding demand in high-end luxury watches as gifts. The central government of the PRC has enforced anti-corruption laws to the letter in the past two years, quashing the practice of luxury gifting. The corresponding personal luxury goods market in Hong Kong was affected with a 25% contraction, according to Bain's market study, and Swiss exports of watch products were hit by the same developments.

2.3.2 Revised Criteria for “Swiss Made” Label



The new “Swissness” legislation came into effect on 1 Jan 2017 and sets a minimum of Swiss value at 60% for all industrial products, including watches, in order to qualify for the “Swiss Made” label.

The law strengthens the designation by providing clear rules for using a Swiss indication of sources in promotional purposes, preventing misuse of the brand, and ensuring its long-term value.

The main change introduced to strengthen the label is the specification of a minimum value criterion for a “Swiss Made” watch, requiring a minimum of “60% of manufacturing costs generated in Switzerland”. Other requirements such as the incorporation of a Swiss movement, or casing-up and final inspection in Switzerland remain unchanged. For the definition of a Swiss movement (i.e. “Swiss Made” watch movement), it has also adopted a minimum of 60% Swiss value, which is **10% higher** than before. New criteria, such as **R&D and certification/quality assurance costs are now taken into account in calculating “Swissness”** as well.

The effects of the new Trade Mark Protection Act are still unclear, but manufacturers are expected to adapt to during the transition period of roughly two years. However, these new rules may **pose a risk to the lower-end products of the Swiss watch industry** who may find it hard to stay competitive while adhering to the requirements. **Manufacturing processes may also relocate back to Switzerland**, possibly to the detriment of Hong Kong watch component manufacturers.

2.4 Human Resources Development

2.4.1 Vocational Education and Training in Switzerland

The Swiss educational system has four major levels. Upon graduating from the lower secondary level, students can choose to continue their studies at Baccalaureate schools, upper-secondary specialised schools, or **vocational education and training (VET)**. Many professional qualifications can be obtained in upper-secondary education.



Baccalaureate schools prepare students for further education at universities. Upper-secondary specialised schools and VET are occupation-oriented schools which prepare students for professional education and training (PET) in PET colleges or universities of applied sciences in specific occupational fields like the watch industry. In Switzerland, VET is the most popular choice among young graduates.

With its dual-track VET programmes and the successful **partnership network** of schools, industry, and government, the Swiss educational system offers practical training for young people through apprenticeships.

The Swiss business community creates around **230,000 apprenticeships each year** for various VET programmes, including **watchmaking**. Moreover, sector-specific programmes are in place to develop more talent in viable ways, including training alliances, partnership schools, inter-enterprises courses, and internship.

There are customised apprenticeship programmes training all-round watchmakers by covering production topics, and others for watch fitters incorporating technical, engineering, after-sales, assembly, and fine-tune skills. Every week, apprentices spend three to four days on hands-on training at the company, and one to two days learning the related theories at VET school. Upon receiving the first professional qualification, the VET diploma, students will

continue their professional training in the tertiary level.



Under the Swiss education system, trained practitioners possess more experience in the WC industry compared with those in competing countries. It bolsters recognition and confidence in society and attracts students to start a career in the industry, which sustains professional capabilities of the local workforce in the long run.

2.4.2 Vocational Education and Training in Hong Kong

In Hong Kong, children generally start education in kindergartens at the age of three, or even a year earlier at nursery schools. They are then required by the government to study at primary and secondary schools for six years each. Upon graduating from secondary, students attain the Hong Kong Diploma of Secondary Education (HKDSE). Around 18% of HKDSE graduates go to university, and some apply for further studies in vocational-oriented programmes and training.

The Vocational Training Council (VTC) offers full-time training programmes of varying difficulties and durations. Three of its member institutions **offer diploma and/or higher diploma programmes dedicated to the WC sector** for students with some secondary education. **The Youth College** offers diploma programmes for students wishing to start a career as a technician or maintenance trainee in the WC industry, whereas **the Hong Kong Institute of Vocational Education (Lee Wai Lee) and the Hong Kong Design Institute (HKDI)** offer higher diploma programmes focusing on professional career development in the emerging timepiece and lifestyle product design business as well as horological engineering and technology.

Part-time certificate/diploma programmes are also available for existing practitioners and industry executives pursuing continuous education. These programmes, under the **“Pilot Subsidy Scheme for Students of Professional Part-time Programmes”**, are accredited at Qualifications Framework (QF) Level 4 in the fields of Watch Services Management, Watch Technology and Repairing, and Watch Technology and Services Management, which are equivalent to attaining an associate degree or higher diploma.

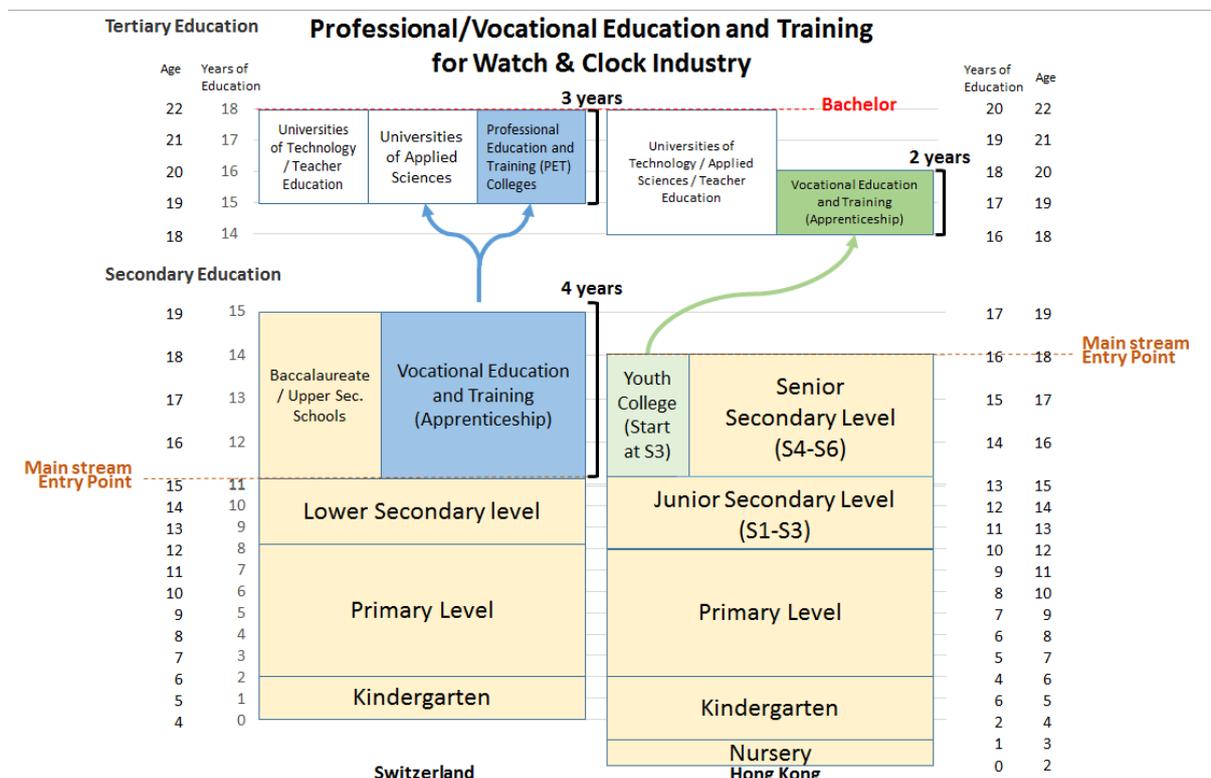


Figure 2-10. Comparison of the Swiss and Hong Kong WC Education System



Watch out, Hong Kong!

As illustrated in figure 2-10, vocational education and training structures in Hong Kong and Switzerland are similar in that both are offered to students from an early age. However, there are disparate **perceptions of vocational education** in the two regions.

VET and apprenticeships are attractive to students in Switzerland. In 2015/16, 62.5% of Swiss students participated in vocational education and training²⁰, suggested that they are encouraged to receive education based on their interests and talent.

62.5%

Swiss students
participated in
VET

In Hong Kong, students are encouraged to finish Secondary 6 or even a degree programme before going on any vocational training in a specific industry. The cultural difference towards nurturing the next generation may have led to the differences in talent development within the two WC industries.

To tackle entrenched perceptions between VET and traditional academic pursuits, some industry stakeholders took the initiatives to look into the problem and recommend solutions in the publication “**Report of the Task Force on Promotion of Vocational Education**”²¹. The key points are as follows:

- **Rebrand the local VET** as “**Vocational and Professional Education and Training**” (**VPET**), covering programmes up to degree level with a large part of the curriculum focusing on specialised vocational skills or professional knowledge;
- **Promote the professional image of VPET** through publicity campaigns, career and life planning platforms in schools, contribution from industries, and financial support by the Government; and
- **Keep up the effort** with government involvement, promotion of Qualifications Framework, and tracking surveys on change of public attitudes.

2.4.3 Demand on Human Capital

Issued by the Federation of Hong Kong Industries in 2010, “Hong Kong Manufacturing SMEs: Preparing for the Future Industry Situation Report Watches & Clocks”²² presents the following supporting evidence on the need of human capital development in the Hong Kong WC industry:

- a. Room for improvement in **product design capabilities** (p.7)
- b. **Worker training** is key to producing high quality products (p.12)
- c. Knowledge transfer and experience sharing on **domestic sales** are required for practitioners and working executives (p.6)

In “Practical Guidebook for New Development of Hong Kong Horological Industry”, issued by the Federation of Hong Kong Watch Trades and Industries (FHKWTI) in 2013²³, a survey studied issues related to technology, manufacturing, human resources, retail, branding, and marketing. Respondents were randomly selected from 600 FHKWTI members and 107 responses were received. As depicted in chart 2-6, the survey showed that 85% of interviewed companies believed that the short supply in watch professionals was due to youths being reluctant to join the horology workforce.

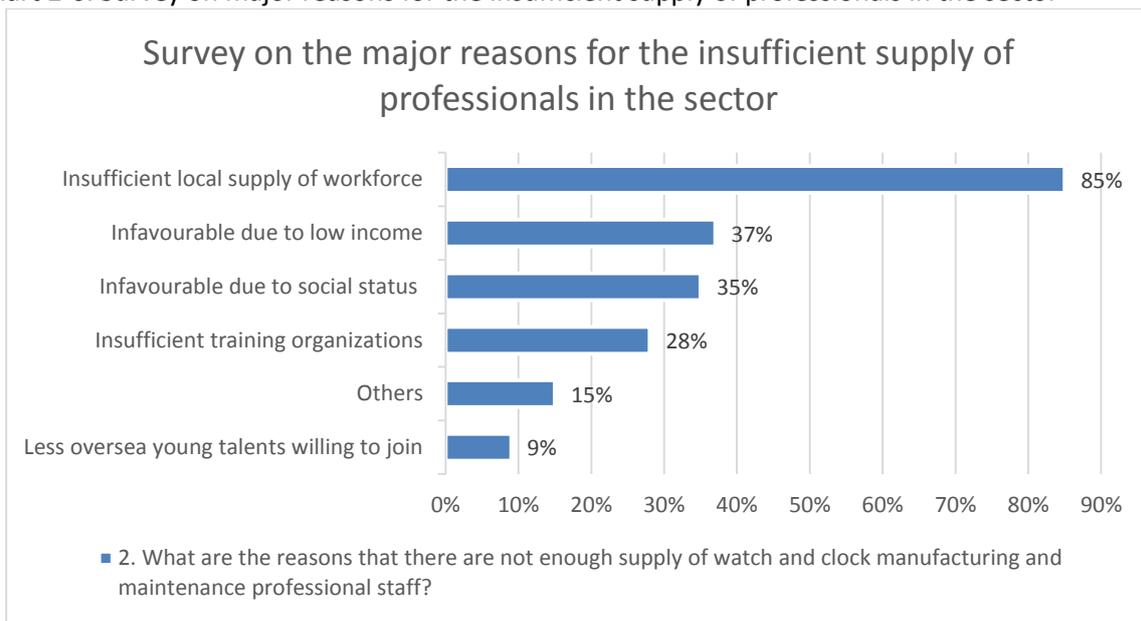
Over 60% of the companies thought that currently available professional training in watch

Watch out, Hong Kong!

manufacturing and maintenance could not meet industry needs. Around 80% of the companies reckoned that there was insufficient training to support talent development in sales and marketing.

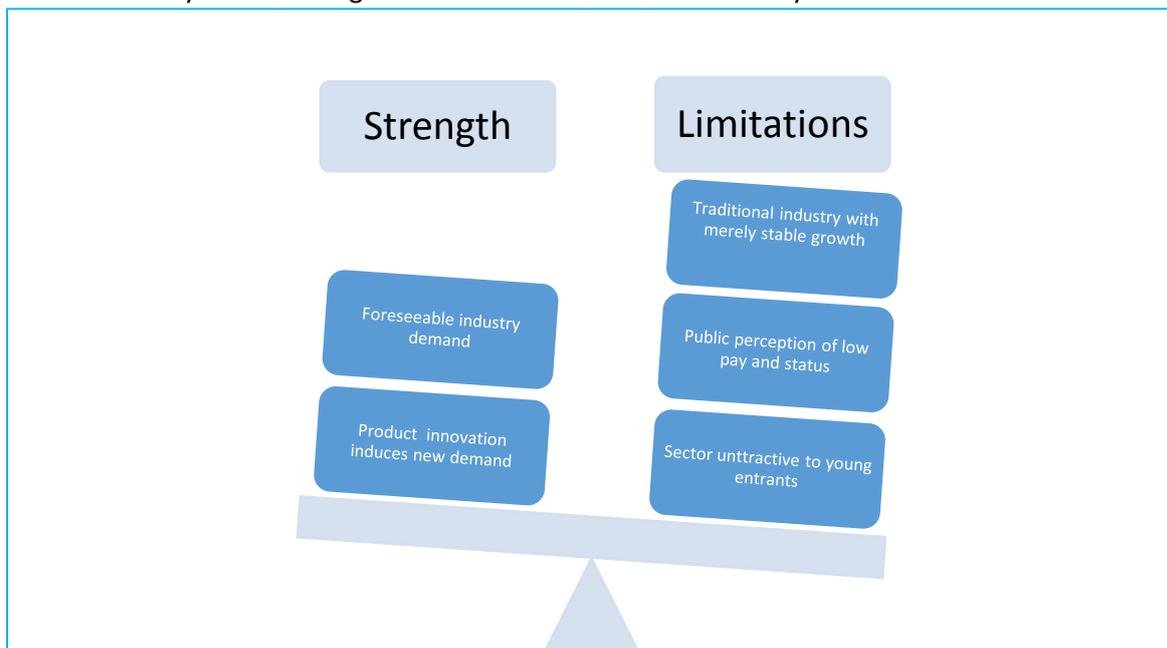
Moreover, the results recommended more specific training in product design, product quality management, and domestic market exploration to hone the skills of practitioners and executives. According to chart 2-7, another survey studying the strengths and limitations of the WC industry revealed that young people are not interested in a horological career due to low social image. This may put the industry's sustainability in peril.

Chart 2-6. Survey on major reasons for the insufficient supply of professionals in the sector



Source: Practical Guidebook for New Development of Hong Kong Horological Industry

Chart 2-7. Survey on the strength and limitations of the WC Industry



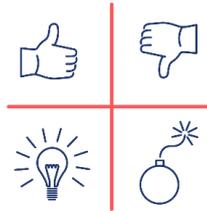
2.5 SWOT Analysis of the Hong Kong WC Industry

Strengths

- "Bang for the Buck"
- Strong Manufacturing Support
- Regional Trade Centre

Weaknesses

- Human Capital Supply
- Manufacturing Technology
- O2O e-commerce



Opportunities

- Growing Global Middle Class
- Unique Local Culture
- Smart Wearables

Threats

- Watch Export Value Recession
- Swiss Made Policy Revision
- Mainland Chinese Competition

2.5.1 Strengths



"Bang for the Buck"

Hong Kong watch products are known for their **high quality** at **competitive prices**. Reliable quality, stylish design, and compliance with stringent product standards in performance and safety have earned acclaim from customers around the world. The attractive "performance-to-price ratio" has secured a niche in the low- and mid-range market for the local industry.

Strong Manufacturing Support

Hong Kong is the second largest wristwatch exporting economy in unit terms, with large manufacturing capacities at Hong Kong watch companies in terms of volume and diversity, ranging from complete watches to bands, cases, parts, and accessories. **A reliable and supportive supply chain for complete watch manufacturing** has developed over the years.

Regional Trade Centre

Hong Kong is the world's largest trading hub for complete watches, watch components, and accessories. As mentioned in Chapter 1, Hong Kong was the world's largest importer of complete watches and second largest exporter of complete watches and clocks by value in 2016.



Watch out, Hong Kong!

2.5.2 Weaknesses

Human Capital Supply

Hong Kong watchmakers are experienced but young people are reluctant to sign up, hindering skills succession and wider development of the WC industry.



Manufacturing Technology

Watch industries elsewhere are developing new manufacturing technology and raising the bar in **precision engineering, new materials, and surface technologies**. Resting on their laurels in product performance and safety, local practitioners don't see the point in improving their manufacturing technology and have fallen behind global competitors.

O2O e-commerce

O2O e-commerce has been prevalent in mainland China for years while Hong Kong has just caught on to digital transactions. **O2O is still not widely adopted in the local retail industry**, suggesting room for improvement in business strategies.

2.5.3 Opportunities

Growing Global Middle Class



The global middle-class has been growing since 2009 and is expected to reach 4.9 billion by 2030, mainly from mainland China and India where economic growth is boosted by domestic consumption for quality value goods²⁴. Hong Kong watch manufacturers may benefit from adding value to their products through quality upgrade, product function innovation, and brand improvement.

Unique Local Culture

Hong Kong is a vibrant city with an inimitable and sophisticated fusion of eastern and western heritage, preserving customs and traditions from centuries of Chinese history with a dash of western culture for over 150 years. In tandem, these influences have made diversity the watchword of the city.



Hong Kong is a fashion capital, ranking 12th in the world and 2nd in Asia in 2017. Local watch manufacturers can take advantage of this by creating signature designs and collaborating with the fashion sector to promote watches and clocks as lifestyle products.

Smart Wearables

Worldwide sales of smart watches has grown sevenfold by unit between 2014 and 2016 to 38 million. Market volume



Watch out, Hong Kong!

expectations are rosy in view of customer demand for connectivity, personalisation, and health monitoring. This new market sector offers traditional WC manufacturers a chance to diversify.

2.5.4 Threats

Watch Export Value Recession



As mentioned in Chapter 1, the total global export value of watches is decreasing, while Hong Kong faces an ongoing decline both by value and in unit terms. Countries with more rapid responses may threaten Hong Kong's status in the watch industry.

Swiss Made Policy Revision

Hong Kong is a major OEM supplier of component manufacturing and assembly for Swiss watches. The revised legislation raises the requirement for Swiss Made label from 50% to 60% of Swiss value and drives the relocation of manufacturing processes back to Switzerland, cutting into the revenue of some watch component manufacturers.

Mainland Chinese Competition

The PRC's central government's posturing for across-the-board quality boosts in Chinese products may threaten Hong Kong watches in the long run, giving local practitioners another reason to maintain their edge in product performance and safety.

2.6 Competitiveness Gap of the Hong Kong WC Industry

Leading Brands with Unique Brand Image and Identity

The Swiss watch industry has led the field over the centuries with an unrivalled global reputation thanks to their devotion to quality and craftsmanship. At present, all three largest global watch manufacturers are from Switzerland.

While Japanese exports lag behind the top three exporting economies, three renowned Japanese companies dominate the mid-range watch markets and are among the top ten largest watch companies in the world.

Famous brands create chain reactions that entice consumers to explore other watch products made from the same country. Yet, Hong Kong WC companies largely rely on OEM and ODM instead of OBM business, and the few that do operate local brands still lack global recognition.

Professional Image of the WC Industry



A poor trade image may drive talent away and stunt the industry. A false impression persists in Hong Kong that the WC industry is a low-tech business for unskilled and uneducated workers, virtually synonymous with “grey-haired men running shops under the stairs in old buildings”.

Meanwhile, **watchmakers and other practitioners are seen as respectable professionals in Switzerland and Japan**, where horological jobs are considered to be a rewarding and sustainable career.

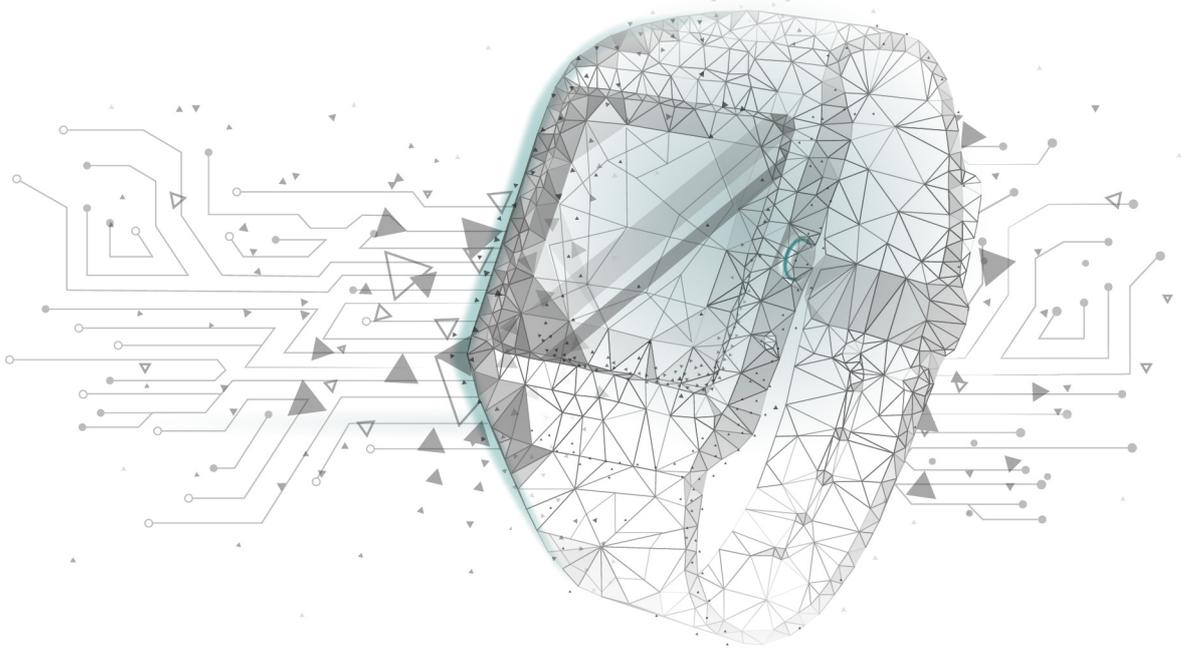
Initiative for Product Development

Over the decades, Hong Kong manufacturers have developed a strong horologic base with manufacturing capability rivalling Japan’s, and some local manufactures are used by Swiss watchmakers. It is essential that the local industry adapts to market changes by taking up new technology.

However, most local watch companies remain OEMs or ODMs with product development constrained by their clients, eroding the incentive to design new products with breakthrough concepts and technology.

Chapter 3

Potential Way-out of the Industry



3.1 Local Industry's Views on the Way Forward

The Hong Kong WC industry is waking up to market changes. In stakeholder interviews, industry representatives ranging from OEMs, OBMs, licensed brands, distributors, and retailers expressed their views on where the industry stands and the forms its further development may take.

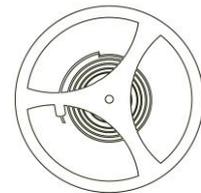
Product Quality and Production Efficiency



Representatives identified **automation** as a key concern and a way to ensure consistent quality and enhance productivity. Existing production lines should be upgraded progressively because automating different processes require different levels of technical know-how to.

Several examples on automating production processes were given in the interviews. Polishing processes can be automated by **integrating computer numerical control (CNC) machining with robotic sensors** to free up skilled labour from existing menial tasks. Prone-setting processes can also be automated due to standardised gems cutting dimensions.

Precision manufacturing is needed to make quality **watch parts with zero defects** before full automation for complete watch assembly can be implemented. Meanwhile, managing the dust generated from the polishing process would solve a massive production problem. There is also potential in upgrading the existing facilities into a **smart warehouse** with the **adoption of RFID**.



There is also room for improvement in **product testing**. A **total solution on failure analysis** with improvement recommendations will help the industry enhance post-testing product quality. Improving test report presentation also promises to add value to tested watches. Consultancies adept in **in-house testing lab facilities** can help the industry **comply with international standards**. **Independent product material safety testing** for watch exports, such as Prop65, will help industry **recognition in overseas markets**.

Brand Building, Sales and Marketing

The industry is exploring ways to strengthen sales on online platforms like Alibaba and emphasising online promotions via digital media such as Facebook, WeChat, WhatsApp, Weibo, Instagram, and live broadcast by key opinion leaders (KOL).



BRANDING

The latter are mostly well-established marketing channels and require large investments from local SMEs. Hong Kong website layouts are also less appealing than those from overseas.



Watch out, Hong Kong!

The industry therefore suggests **establishing a common e-platform** for online sales and sharing inter-company information (such as global watch pricings) or sharing a co-platform with fashion products. Analysing big data from e-platforms can help the industry understand customer behaviour and measure the effectiveness of promotions.

Apart from online sales and marketing, aftersales service is also important to a watch brand. The industry suggests providing mobile apps for customers to check watch repair progress and **setting up watch repair standards to evaluate and examine repair results**. These initiatives can raise consumer confidence in local watch brands.



The industry also suggests setting up a **recognised quality scheme awarded to quality Hong Kong-made watch products**, as the local industry aspires to become “Asia’s Geneva”.

New Product Development

Smart watches are entering the mainstream and the industry is alert to this opportunity. Associated tailored testing services are needed to produce quality smart watches.



For instance, **certification in radio frequency and electromagnetic compatibility (EMC)** can help build customer confidence and address concerns over product safety. Smart watch development involves IT, software, and electronics industries, and a three-sector collaboration will create synergy.

A **resource centre** can support innovation by showcasing the latest smart wearables, information on different new materials, product functions, and testing standards and methodologies.



Human Resources Development

Hong Kong has a long-running shortage of **skilled technicians in watch repair and assembly** and urgently needs to attract fresh blood. More **advanced training programmes should be accredited under the Quality Framework (QF)** to improve industry image.

For existing practitioners, staff training in workshops, e-learning platforms, and courses on **establishing and operating online shops** will increase company competitiveness. The industry is keen on **cooperating with some Swiss watch institutes in curriculum design to enrich training content and quality**.

3.2 Future Positioning of the Industry



Against the sea change in the market in recent years, Hong Kong WC manufacturers should **not only focus on immediate or short-term measures**, but also contemplate the future business direction of the whole industry.

3.2.1 Market Positioning

Competition in the Low-end Market

For over 50 years, the Hong Kong WC industry has been a proud supplier of low-priced watch products, and it was once the largest watch exporting economy in Asia. However, the situation has changed with the evolution of the mainland Chinese business ecosystem since the 1980s.

Mainland China, the world's factory, hosts a full ecosystem for the manufacturing supply chain, including component manufacturers, low-cost workers, a technical workforce, assembly suppliers, and numerous local customers. As stated in Chapter 2, it has become the world's largest exporter of wristwatches by units in recent years—and nearly triple that of Hong Kong in 2016. Its dominance lies in the mass production of low-end watches with an average price of USD 4 per unit. Its major exports of watch products (by quantity and value) are quartz watches made from non-precious metals or other materials such as plastics. With mature design and manufacturing technology, low-cost mass production is easily realised with an abundant labour force.

Hong Kong's main export group is battery-powered wristwatches with non-precious metallic cases, similar to mainland China's, but the average export price for a **Hong Kong watch is around USD 24, six times that of mainland China.**



China has won in the low-end export watch market. The quantitative and gross value gap is so enormous that it is very hard for Hong Kong to compete with the mainland by relying on cut-price strategies.

Challenges in the High-end Market

Sales of high-end watches are also declining in recent years. As mentioned in Chapter 2, the export of Swiss watches has been sinking as several of its major markets, such as Hong Kong, mainland China, and the U.S. continues to shrink. **As reported by the Federation of the Swiss Watch Industry, the total exports of Swiss watches in 2016 was at its lowest level since 2011. Over 85% (13 out of 15) of the biggest markets contracted, especially those in high-end watch products (luxury watches).**

Watch out, Hong Kong!

Mainland Chinese tourists once drove up the demand in Hong Kong luxury watches, but new social policies recently introduced by the central government of China, coupled by an import tariff increase on luxury watches in 2016 to promote domestic consumption, have suppressed demand for luxury watches in both places

The change in consumer behaviour creates challenges for the luxury watch market.

More cautious and less likely to purchase at the listed selling price, consumers now realise that they may be able to buy watches at a lower price in other countries, they have also learnt not to buy a luxury watch upon its release, but to wait until it drops to the “right price”, causing downward pricing pressure on the luxury watch sector.

Despite the shrinkage, luxury watch markets remain dominated by the Swiss. The “value” of Swiss luxury watches is a perfect fit of centuries-old tradition, expertise, craftsmanship, advanced technology, and innovation. Apart from function, luxury watches also carry symbolic and emotional elements, and it takes time for new brands to build reputation, prestige, and loyalty in the luxury market.

Against contracting and uncertain markets, it would be risky for the Hong Kong WC industry to bet on luxury watch sectors.

Opportunities in the Mid-range Markets

The emerging global middle class holds sway over economies and societies due to its rapid growth. The Middle class are often targeted by consumer-facing businesses because of their size and discretionary spending power.

According to the HKTDC’s research²⁵, “Although China’s economic growth has slackened in recent years with its growth rate entering a ‘new normal’, the Mainland middle-class consumers are still upbeat about the prospects for their income and spending.”

Chinese market growth may not fare well in high-end or low-end retail, but mid-range consumption is booming along with increasing demand for better quality. “Mainland middle-class consumers have changed from focusing on product quality to pursuing ‘personalised trendiness’, implying that they are now **more devoted for unique individual style, and less interested in popular brands.**”



Middle class approaches all-time peak

According to Brookings Institution²⁶, about **140 million** people join the ranks of middle class annually and this number could rise to **170 million** in five years’ time. A majority of new entrants into the middle class, around **88%** of the next billion, are living in Asia—chiefly in **mainland China and India.**

Watch out, Hong Kong!



The key is that consumers may eschew leading brands for products with unique design and quality which reflect their self-image and personal taste. Therefore, **middle class consumers may not be looking for jewel-studded tourbillons, but watches that are “just right”, fashionable, bold, and eye-catching** that look expensive.

As mentioned in Chapter 2, the average price of exported watches from Hong Kong stands at USD 24, compared to USD 708 from Switzerland. **The vast price gap between Hong Kong and Switzerland signifies ample rooms for added value.**

Hong Kong watch products are well-known for being **good value for money** with **reliable quality, chic design, and adherence to stringent product standards** in performance and safety. A stone’s throw from the mainland Chinese market and manufacturing base, Hong Kong is in an excellent position to capture the growing global mid-range market with quality watches at competitive prices.

3.2.2 Product Diversification

Hong Kong WC manufacturers have developed its business in low- to mid-range quartz and electronic watches over the decades. **Battery-powered wristwatches with cases of non-precious metals are now the largest export category** for WC products.

The launch of the Apple watch in 2015 presents the industry with a brand-new challenge. Smart watches are sometimes seen as a growing threat to traditional watches. In less than three years, smart watches have created a product category from the ground up with notable growth in market shares. **Units shipped for smart watches were at 85% of Swiss watches in 2016, and the gap between the two is closing quickly.**

While “traditional” watches serve one purpose above all others—to tell the time, smart watches are hardwired to multitask.

A smart watch is sometimes seen as a wearable computer rather than a watch, offering a continuation of functionalities currently offered by smart phones, tablets, and laptops.

Different applications are available on different smart watches. Some provide fitness and wellness services like tracking steps, heart rates, and sleep monitoring. Others have mobile functions like sending messages, answering calls, showing maps and directions, and NFC payments. Functionalities vary considerably depending on market positioning and app support, with limitless development potential.



Smart watches are born to serve multiple functions.



Watch out, Hong Kong!

This growth potential notwithstanding, global watch industries, including Hong Kong's, hold disparate opinions regarding their impact on traditional WC industries. Many watchmakers are struggling to decide whether they should turn to the smart watch, a niche they have no competitive advantage in and requires different technologies.



Some luxury watchmakers are flirting with the idea of releasing their own smart watches while other traditional watchmakers have gone ahead manufacturing smart watches for their customers. It seems that many others will follow.

Without a doubt, the explosion of the smart watch market will change the traditional WC market structure. Some traditional watchmakers also see this as an

opportunity to interest young people in timepieces, hoping that they will eventually move to the traditional mechanical watch markets.

As with other traditional watchmakers, Hong Kong WC manufacturers are new to the smart wearables industry. The step-change from the mechanical to the electronic needs R&D in sensing and information technology. However, the strong foundation of the local electronics industry will give Hong Kong a head start in this market, and the steadily growing local biotech industry will also support the development of health and fitness functions.

Given the strong demand for smart watches and future market potential, local WC manufacturers may diversify and explore new business opportunities in this product sector.

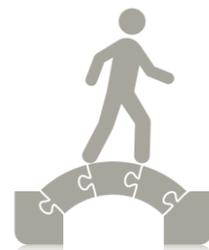
Key Takeaways

In view of emerging market trend and fundamentals of Hong Kong's WC industry, the Report recommends that the industry:

1. Move upmarket to mid-range/high-end markets
2. Diversify to smart wearables

3.3 Gap to the Proposed Positioning

Having established the future positioning for the local WC industry, we need to review its current standing to identify the gap to these strategic goals.



Lack of High Standard Qualification and Testing Facility to Support Product Enhancement

In general, price reflects quality. A brand has to ensure and improve the quality of a product to justify a price premium. To boost this perceived value, Hong Kong watchmakers need to set higher performance targets for their products by meeting high level certification criteria.



Watch out, Hong Kong!

The average Hong Kong watchmaker only conducts product quality testing according to customer requirements, while some international Swiss brands will go the extra mile and get their watches **certified by independent external bodies such as CSOC, Geneva Seal, and FQF Seal** despite enjoying an excellent reputation of their own accord. These certifications issued by world recognised certified bodies are **proof of excellence** in watchmaking and chronometry.

No Swiss-style specialised product quality certification exists for WC products in Hong Kong. A recognised local certification and product quality excellence scheme will add value to Hong Kong watches and components and set them apart from low-end products. Relevant testing services and advisory support are also required to help local manufacturers improve product performance.



Poor Brand Images and Ineffective Use of Digital Marketing

Over the years, Hong Kong WC products are generally seen as low-cost and low-end. It is hard for local manufacturers to revamp their product image as medium- to high-end products, particularly so alone.

Unlike other countries, **Hong Kong does not have a globally recognised scheme that is presented to watch products with excellent quality or design** in support of industry-wide promotion. Digital marketing channels for industry and product promotion are not being as effectively deployed overseas brands. Local companies cannot make the best use of Big Data to develop business.

Limited Knowledge and Support on Smart Wearable Development

There is no doubt that smart watches will take an ever-growing slice of sales revenue in the watch industry.

This demand has prompted some local manufacturers to consider developing watches with multiple lifestyle features and functions, but it would require a **multi-disciplinary approach** spanning different technology areas such as biological sensing, electronic communication, and data security.



Most Hong Kong watch companies are OEMs and may not have a strong initiative in developing new designs, functions or technologies for their watch products. They also have limited knowledge to support product and process innovation. For a smart watch, common functions like pedometer, heart rate tracking, and wireless payment require healthcare, electronics and information technology expertise.

The local WC industry has not connected with other industry sectors, and local technology in sensing devices for biometric sensing and the like is immature, hindering the collaborative development of smart wearables in Hong Kong.



Unlike traditional watchmaking, **there is no international testing standard for smart watches.** Existing major smart watch brands are setting their own internal testing standards with reference to international standards from other industries.

As the smart watch industry in Hong Kong is still in an embryonic stage, there are no local-specific support in smart watch pre-compliance testing, particularly in performance evaluation, data security, and electronic communication. The equipment and expertise required for in-house testing poses a heavy burden to prospective SMEs.

Shortage of Young Talent

The future of Hong Kong WC relies on the development of young talent who will lead the industry tomorrow. However, as with other industrial sectors in Hong Kong, **the WC industry faces a talent gap with reluctant youths who see it as a menial job for factory workers.**

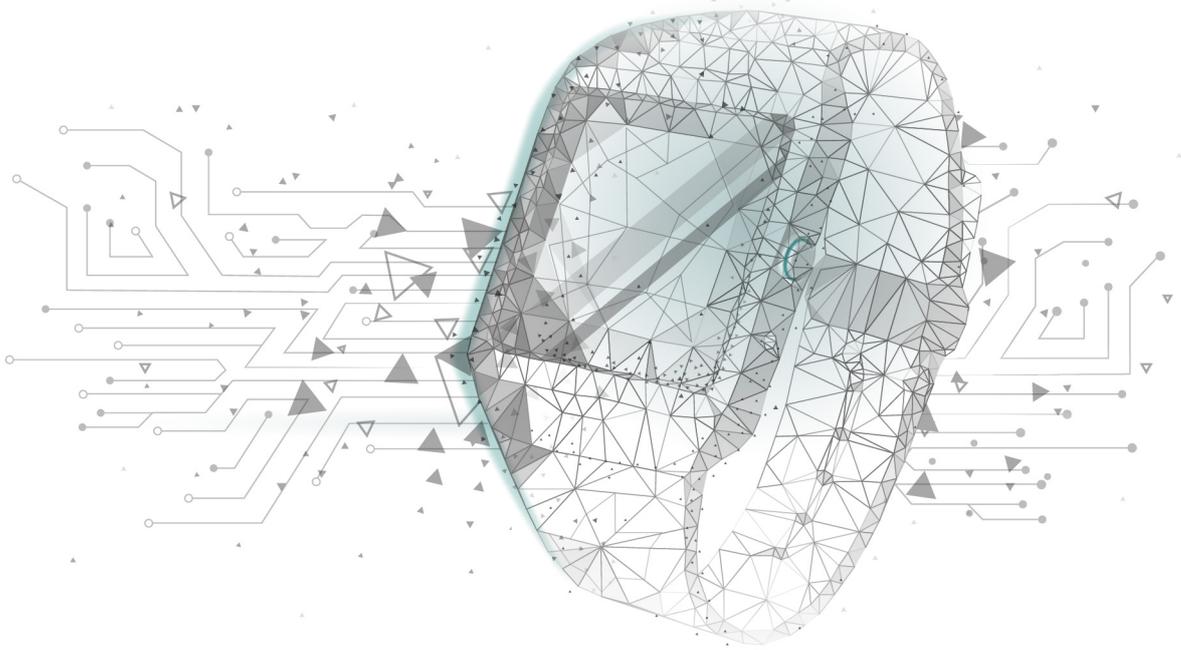


The existing educational and training programmes teach horological basics in Hong Kong cannot fulfil future demand for human resources, especially in technology advancement and new product.

In summary, there is still a lot of room for improvement before the industry reaches this destination. A full understanding of the distance between where we stand and where we are heading allows us to draw up a more comprehensive roadmap along the way.

Chapter 4

Strategies and Recommendations



Watch out, Hong Kong!

To arrive at the future positioning set for the Hong Kong WC industry, a strategic planning tool, the Ansoff Matrix, is applied to devise strategies for future growth.

Four strategies have been formulated for the industry, covering **brand building, quality enhancement, talent development, and product innovation**. Six recommendations were included for their implementation.

Ansoff Matrix for Strategic Planning



	Current Products	New Products
Current Market	Strategy 3: Market Penetration Talent Development	Strategy 1: Product Development Quality Enhancement
New Market	Strategy 2: Market Development Brand Building	Strategy 4: Diversification Product Innovation

Six Recommendations

1. Develop an Impartial Central Laboratory Providing One-stop Services
2. Promote “i4.0” Strategy to the Watch Industry
3. Launch a Design Recognition Scheme for Hong Kong Watches
4. Establish a Hong Kong WC Academy to Develop a Structured Talent Pipeline
5. Set up a Hong Kong Horology R&D Centre
6. Form a Hong Kong Smart Wearables Consortium

4.1 Quality Enhancement

	Current Products	New Products
Current Market	Strategy 3: Market Penetration <i>Talent Development</i>	Strategy 1: Product Development Quality Enhancement
New Market	Strategy 2: Market Development <i>Brand Building</i>	Strategy 4: Diversification <i>Product Innovation</i>

Strategy 1: Quality Enhancement

- Make Hong Kong “Asia’s Geneva” in the watch manufacturing sector, with qualified design and manufacturing capability



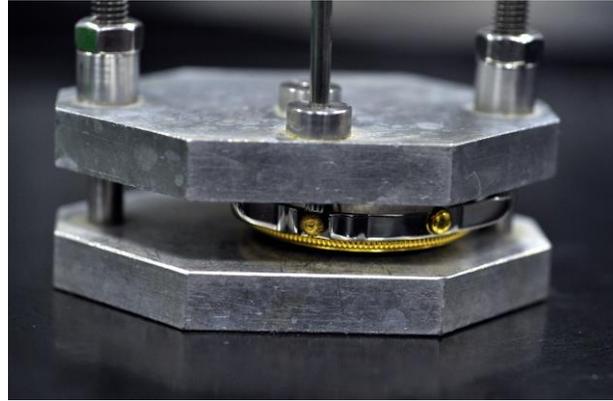
Swiss watches are widely recognised as the pinnacle of sophistication, famous for their accuracy, durability, precision, and craftsmanship. The phrase “Swiss Made” is synonymous for the impeccable quality, and several internationally renowned brands come from Switzerland.

Specifically, many share another distinction—*Poinçon de Genève/Genfer Siegel*, or the Geneva Seal. The Swiss city and canton is regarded as the cradle of fine watchmaking and leads the national watch-making industry in excellence and craftsmanship.

Hong Kong, as the world's largest importer of complete watches and second largest exporter of complete watches and complete clocks by value in 2016, has a very strong foundation in complete watch and watch component manufacturing. By adding value to Hong Kong-made/-branded watches with improved quality in terms of design, accuracy, and consistency that is achieved **by upgrading manufacturing, testing, and certification capabilities, Hong Kong can position itself as “Asia’s Geneva” in watchmaking.** The local watch industry can close the gap with the Swiss, increase their profit margin and seize the growing opportunities in the mid-range markets.

Recommendation 1: Develop an Impartial Central Laboratory Providing One-stop Services

This study recommends an industry-wide quality boost for Hong Kong by adopting more rigorous quality requirements with the support of related testing, certification, and advisory services. To add value to Hong Kong watch products, local watchmakers should set higher targets of product performance by adopting high-level criteria, such as **NIHS, CEN, ISO** and other stringent international watch standards. These **160+ watchmaking standards** are regularly reviewed and updated, covering areas such as design, luminescent materials, water-resistance, shock-resistance, anti-magnetism, and minimum requirements for the certification of chronometer movements.



Frequent updates on new standards and revision to existing ones keep the industry abreast of the latest requirements and prepare for changes in advance. However, some local watch manufacturers admit that they are uncertain about the precision and accuracy of their products despite try to follow international standards.

An impartial central laboratory will provide indispensable support to local SME watchmakers adopting high-level international watch standards. The objective is to encourage and assist Hong Kong watch products improve in quality by providing Swiss-standard product testing, certification, and advisory services. This central lab may cater to Hong Kong WC products by providing specialised quality certification similar to Swiss certifications like CSOC, Geneva Seal, and FQF Seal.

Support should be provided for extensive and regularly updated testing services such as performance tests in physical, chemical, mechanical, electronics and environmental aging compliant with NIHS/ISO standards.

The development of an impartial central lab for WC testing seamlessly aligns **with government policy on developing Hong Kong into a regional testing and certification hub** by buttressing the brand of “Tested in Hong Kong, Certified in Hong Kong”. Hong Kong can become a major testing and certification centre thanks to an internationally established reputation for professionalism and integrity; a robust accreditation system run by the Hong Kong Accreditation Service (HKAS) of the Innovation and Technology Commission (ITC); and its strategic location next to the manufacturing base in mainland China. The central lab hopes to be recognised in Asia on a level comparable to Swiss testing labs.

Apart from testing and certification for traditional watches and watch products, the central lab may also account for the latest product development trend in the industry and provide relevant testing service. For example, **testing for smart watches should be treated as an emerging industry-wide demand**. As this market is relatively new, Hong Kong has to **build up an industry-level smart watch testing infrastructure and methodology** to gain credibility and confidence from customers when it comes to quality assurance.

Watch out, Hong Kong!

Centralised smart watch testing facilities capable of additional physical testing for electronics (e.g. testing of radiation frequency compliance and healthcare monitoring technology), environmental sensing, and information technology (e.g. GPS, data security, and software compliance) will help the local WC industry greatly.

They are crucial to product innovation as part of a diversification strategy, and should be incorporated into the impartial central lab to provide a full menu of tests.

The Central Lab may also provide one-stop advisory services on failure analysis of watch products from R&D to manufacturing to help local companies understand the weaknesses of their products and identify ways to improve. It can also support quality checking in iterative cycles of product development and quality improvement.



As the proposed central lab covers multi-disciplinary testing and technology advisory services, it will ideally be run by a neutral body with various technology expertise. Endorsement by a government department is highly recommended for extra public credibility.

Watch out, Hong Kong!

Recommendation 2: Promote “i4.0” Strategy to the Watch Industry

The watch industry faces a dilemma. On one hand, **manufacturers** are aiming for **standardisation** and high unit numbers to allow **fully automatic production**; on the other hand, **customers** demand **heavily customised products** with unique and personalised designs.



Industry 4.0 solves both. The industry should adopt the i4.0 strategy in the long run to enable more flexible, and more efficient processes that can **produce higher-quality and customised goods at reduced costs through Internet-of-Things (IoT) and data analytics**. The goals are to achieve **self-optimizing, self-adapting and self-organising** manufacturing.



OPTIMIZATION



AUTOMATION

In traditional manufacturing, a design has to go through multiple cycles of parameters fine-tuning to get the dimension and quality right. A smart production line featuring i4.0 elements, equipment, machinery, and devices will be linked up under the concepts of IoT, cyber-physical systems (CPS) and cloud computing. Manufacturing conditions can then be monitored and scientifically controlled to ensure the outcomes of the product, **realising innovative design efficiently and effectively**.

Potential technology developments include **automatic loading and unloading** for hands, movements, and dials; automatic assembly of watch movement, cases, and hands; testing stations; automatic quality inspection by robotic vision and AI; clean room design for dust free environment; and watch crystal cleansing devices.



The study proposes establishing a demonstration line for complete watch assembly process with fast changeover capabilities catering for the need of small production size. The line will showcase i4.0 concepts including IoT, CPS, real-time monitoring, and data analytics in watch manufacturing. Specific robotics and automation solutions for particular manufacturing processes in-line with i4.0 are also recommended.

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The objective of the line is to promote the **“i4.0 Smart Factory”** strategy, encouraging the use of advanced technology in watch manufacturing to achieve better product and production quality in terms of flexibility, reliability, and efficiency. It also aims to prepare the Hong Kong WC industry as the world migrates to smart business models and solutions.

As HKPC has already taken the lead in introducing i4.0 to various Hong Kong industrial sectors, it can do the same for the WC industry. Other research institutes may also work with local watch manufacturers to develop new technologies that will support the conversion to smart factory.



4.2 Brand Building

	Current Products	New Products
Current Market	Strategy 3: Market Penetration <i>Talent Development</i>	Strategy 1: Product Development <i>Quality Enhancement</i>
New Market	Strategy 2: Market Development Brand Building	Strategy 4: Diversification <i>Product Innovation</i>

Strategy 2: Brand Building

- Revamp Hong Kong-made/-branded watches as lifestyle/fashion products with “bang for the buck” in mid-range and high-end markets

Over the years, the Hong Kong WC industry has chiefly served low- to mid-range markets. The average unit price of Hong Kong watch is only 1/30th of a Swiss watch. Spikes in labour and production cost in recent years has put the industry in a very difficult position. As stated in 3.2.1, it is not a good time for Hong Kong manufacturers to invest and compete head-on with Switzerland in the luxury watch market.

Meanwhile, Hong Kong watch products are well-known for **quality at competitive prices**. Our products brandish reliable quality, fashionable designs, and adherence to stringent product standards in performance and safety.

As **Asia’s World City**, Hong Kong exemplifies a **modern fusion of Chinese and Western culture**. The public acknowledges watches as high-end fashion, a charismatic addition to standard attire in social and business events.



By emphasising the value of the watch as a product of lifestyle and fashion bridging East and West, the local watch industry will find their niche in new markets. This study advises rebranding WC products as fashionable lifestyle products by adding value associated with Hong Kong’s cultural DNA in order to move up to mid- to high-end markets and retain the city’s standing in the world.

Recommendation 3: Launch a Design Recognition Scheme for Hong Kong Watches

Regardless of culture or beliefs, consumers are always looking for the best product that money can buy, but they may overlook some good designs due to the overwhelming marketing campaigns from established brands in mass media. To support the healthy development of quality and fashionable designs in the industry, this study suggests running a **Design Recognition Scheme** for the **integrated promotion of the “Made by Hong Kong” branded watch products**.

The proposed Design Recognition Scheme will run regularly to commend watch designs with aesthetic and functional excellence as well as unique features. **Recognised watch designs can**



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display the logo of the recognition scheme on the product for promotional purposes. Award-winning designs will be exhibited on a world tour showcasing “Made by Hong Kong” watch products at select exhibitions.

As fashion landmarks and shopping centres around the world encourage **pop-up stores** to attract shoppers looking for fresh and inspiring products and experiences, the Scheme will do the same and take the outstanding designs to overseas markets.

The Scheme will be **extensively promoted through local and international marketing campaigns** such as advertisements in international fashion and travel magazines. Online platforms also play a major role: the establishment of an **official social media platform for integrated promotion of awarded watch products** will benefit the overall image of Hong Kong watch products as lifestyle/fashion products. Other social networks like official websites, Facebook, Instagram, and YouTube may also be used.

Similar design recognition programmes have been run successfully, such as the Red Dot Design Award (“Red Dot”) of Germany and the Good Design Award (“G Mark”) of Japan. Their success may be attributed to **strong government support** by providing publicity platforms for their schemes in international events. Government support will be crucial to the outcome of the proposed Scheme.

An independent, impartial organisation supported by the government should lead the execution, with active participation from the industry and related trade associations to drive it forward. The success of the Scheme also hinges on gaining public recognition with the support of relevant quasi-autonomous non-governmental organisations (QUANGOs) like the Hong Kong Trade Development Council and the Hong Kong Tourism Board.

Healthy development of quality designs from the industry will inspire confidence in “Made by Hong Kong” watches with assured design and quality among potential consumers.

4.3 Talent Development

	Current Products	New Products
Current Market	Strategy 3: Market Penetration Talent Development	Strategy 1: Product Development <i>Quality Enhancement</i>
New Market	Strategy 2: Market Development <i>Brand Building</i>	Strategy 4: Diversification <i>Product Innovation</i>

Strategy 3: Talent Development

- Develop Hong Kong as a regional talent hub for the watch industry

The above strategies for ongoing development of the Hong Kong WC industry are moot without a continuous supply of qualified and capable people. However, as mentioned in Chapter 2, Hong Kong faces a shortage of young talent interested in the WC industry. They are reluctant to join the industry and a talent gap is evident. The **negative image of “low-pay unskilled workers” in the manufacturing industry**, built up in Hong Kong over the decades, also need to take some of the blame.



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It is vital to attract young people to a career in the WC industry—they are the source of the “talent” in the talent pipeline.

Recommendation 4: Establish a Hong Kong WC Academy to Develop a Structured Talent Pipeline

In Hong Kong, horology-related education and training programmes only go up to level 3 and 4 of the Qualification Framework (QF). If the industry is to upgrade its product quality and branding, it should consider fielding more advanced education and training.

This study recommends establishing a **Hong Kong WC Academy** by benchmarking the Swiss training system in the watch industry. The objective is to develop a **structured talent pipeline** of qualified professionals that will sustain industry growth.

Talent development initiatives have already been taken up by other industries in Hong Kong. Recently, the **MTR Academy** was established to provide different education courses and training to individuals from disparate educational background who are interested in the railway industry, achieving vertical penetration in talent development.

- **One-off introduction courses** are provided to the general public targeting senior secondary school students.
- **Comprehensive structured two-year accredited programmes** are offered to secondary school graduates.
- **Short-term continuous professional development courses** are offered to experienced practitioners and engineers from related fields.



Similar programmes in other industrial sectors are also being offered by their corresponding institutions, such as the International Aviation Academy and the Construction Industry Council.

The proposed Hong Kong WC Academy may provide training opportunities at different levels for students to specialise in

watch design, production, quality control, repair and maintenance, retail, branding, and/or marketing. Both theory and practical training should be covered to nurture the next generation into all-round practitioners that can work creatively, independently, and collaboratively in the industry of the future.

Establishing **cooperative arrangements with Swiss training institutes/companies** for some exchange programmes will be needed, giving programme participants valuable experience

and attracting more applications. **Internships in watch companies** will be important to students' career development, showing them their career prospect first-hand to entice them into joining the industry. A **talent pipeline** is then constructed by growing Hong Kong's own talent bank for an industry-wide upgrade.

Advanced professional development programmes can provide learn-and-refresh opportunities for practitioners and industry executives. Overseas experts can be invited to deliver training courses and workshops with the latest market information, technology, and global insights. For instance, they can introduce local players to the application of enabling technologies in specific areas like watch repair and maintenance.

These programmes can form part of a **continuous learning culture**, top up the qualifications for industry veterans and retain a sufficient qualified workforce with an fresh mindset in the ecosystem. Overall quality standard will gradually improve once the people's technical capabilities are upgraded.

Apart from the depth of technical knowledge, the breadth of training should also be broadened and diversified to cater for ever-changing market needs. **E-learning platforms** can be built to fulfil training and development needs for industry practitioners, such as retail and sales staff scattered in different shops. Through extensive exposure and intensive training, WC workers can learn new ways to make Hong Kong's WC industry more competitive.

Previous chapters noted that branding is hugely important to individual WC brands, and the same goes for Hong Kong's WC industry as a whole. **Promoting a professional image of the WC industry** will attract young people to start a career and build a talent pipeline.

The founding of the MTR Academy is a good example in building up and projecting a professional image of engineers and mechanics in the rail industry. For WC, setting up awards and accreditations to address the effort and achievement from outstanding individuals can encourage more creative and innovative designs of WC products. They can make media appearances as role models to bolster the image revamp. A **"STAR" programme can identify and groom talent in specific professional areas such as watch design, technology innovation, and watch craftsmanship**. Potential candidates may receive extra resources in their career development, directing them to focus on the skills they are interested in and giving them an opportunity to show their talent.

This approach may make young entrants more satisfied and proud of their expertise, thereby staying in the industry for good after training.

The proposed **Hong Kong WC Academy** may be led by a government-owned organisation (in the way the MTR Academy is led by the MTR Corporation), a training institute, a government department, a statutory body (like the Hong Kong International Aviation Academy by the Airport Authority Hong Kong), or an industry support organisation. It should have a good understanding of the WC industry and networks to collect industry views on their collective development and needs such as talent type, technology level, and skills.

4.4 Product Innovation

	Current Products	New Products
Current Market	Strategy 3: Market Penetration <i>Talent Development</i>	Strategy 1: Product Development <i>Quality Enhancement</i>
New Market	Strategy 2: Market Development <i>Brand Building</i>	Strategy 4: Diversification <i>Product Innovation</i>

Strategy 4: Product Innovation

- Diversify from traditional watches to smart wearable devices

Innovation can be seen as a catalyst for growth of a business by making use of better solutions to create more effective products, processes, and services. As mentioned in Chapter 2, total exports of watch products from major exporting economies are dropping in the last three years, while the market of a new product group, smart wearable devices (or smart watches), has been expanding since 2015.

Traditional timepieces once took the lion’s share of the market, but electronics and Internet technology have moved on along with the market. The emergence of the smart watch market aligns with existing global trends of connectivity and personalisation. This attracts a growing non-watch-wearing crowd to consider a smart watch due to its smart functions. There is no doubt that this new market will gain significant ground in future.

Two famous brands from the U.S. and Korea, respectively, have recently had their first Midas touch from smart wearables. Diversification from traditional watches to multi-functional watch products like smart wearables has excellent potential.



Hong Kong watchmakers may **collaborate with other industry sectors** such as electronics, medical device and healthcare, IT, and fashion to develop innovative products for this growing market.

Recommendation 5: Set up a Hong Kong Horology R&D Centre

This study suggests setting up a Hong Kong Horology R&D Centre to focus R&D on horology and support diversification in new product development.

Product diversification has always been associated with applying new technologies in new product development. Some well-established local watch companies may have their own technical team to support in-house product development, but few have the resources and capability to maintain an in-house R&D team. The proposed Centre can **bring in advanced designs, technologies, and special processing equipment from overseas developers**. This is a proven way to spark off innovative ideas for further in-house product and process enhancement in the industry.



Development ideas for new designs and functions, improving product quality, and improving process efficiency can support overall quality improvements for Hong Kong's watch products.

Watchmaking-specific R&D topics like new materials, sensor technology, advanced surface treatment, coating, precision manufacturing, tooling design, equipment development, and quality checking system should be funded from various ways.

The Centre should also help promote the use of innovative ideas and technologies for product development in the WC industry to foster **an innovative and proactive culture of applied R&D**. An impartial organisation with the technical capability to conduct applied R&D projects and in-depth knowledge of watch manufacturing will be an appropriate host for this Centre.

Updated information from the industry on their needs for product development and technology upgrade is also required to advise on the right R&D direction genuinely in line with what the industry needs.

Recommendation 6: Form a Hong Kong Smart Wearable Devices Consortium

Developing smart wearables involves multi-disciplinary technologies. The popularity of smart wearables is intertwined with the development of mobile applications. Countless lifestyle mobile apps are available for end-users in various forms. A successful app developer should not only have professional IT knowledge but also acute insight in lifestyle trends and marketing.

The key is to promote a seamless integration of local watchmaking with technologies across diverse sectors. This study recommends forming a **Hong Kong Smart Wearable Devices Consortium** that will support product diversification into smart wearables by cultivate this new industry through **integrated cooperation across industries**.

Business networking events with enterprises from various industries such as **fashion design, electronics, IT, medical, and healthcare** can meet WC representatives to **communicate and exchange business ideas**. A new supply chain needs to be developed for the sake of sustainability in the local industrial ecosystem. The WC industry will also find a directory of reliable suppliers for app development and electronic components very useful if they are accredited with quality standards from an impartial party.

Harnessing the tight bond between users and smart watches in daily life, developers are integrating more bio-sensing mechanisms into these devices to meet the demand for heightened health consciousness. The proposed smart wearable devices consortium should take the lead to promote and encourage the **development of standard wearable modules with bio-sensors to support the product development of healthcare functions**. **Standardised testing methodologies** for bio-sensing functions should also be developed for the purposes of quality assurance with new components.

The Consortium will be an effective way to incubate a new industry sector in Hong Kong. The development of the automotive parts manufacturing industry, the aviation component manufacturing industry, and the 3D printing industry in Hong Kong are all good examples of taking manufacturers from basic industries to a higher level. These initiatives have to be led or mediated by a neutral industry organisation with strong connections in different industries to balance the interests of different parties.

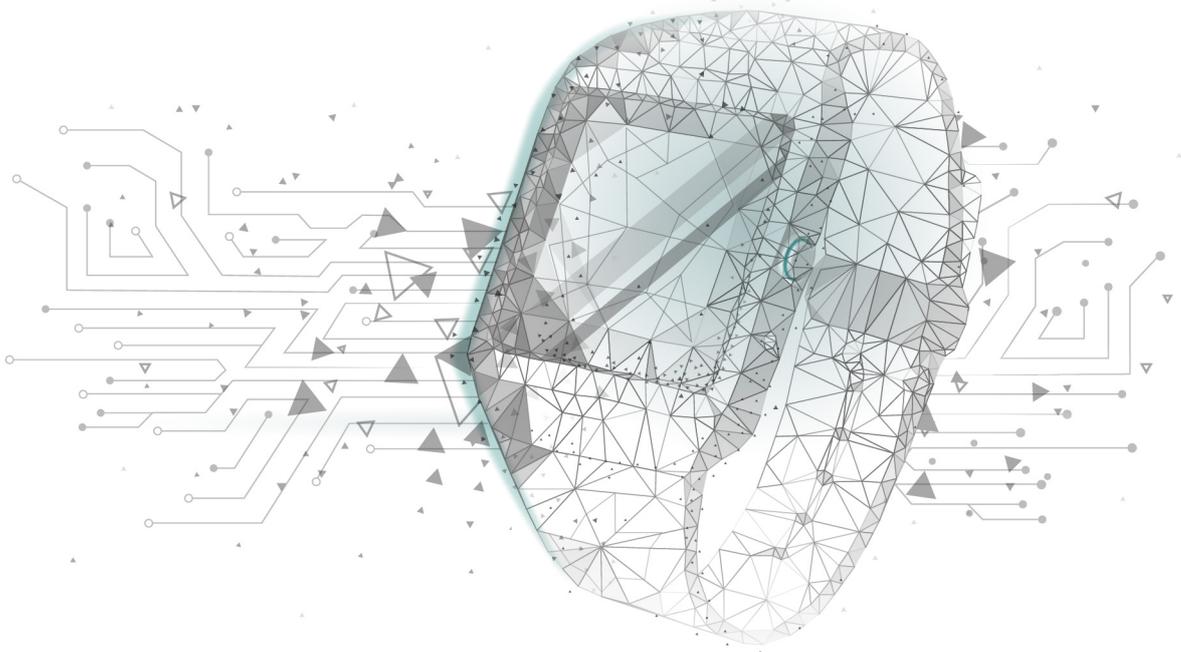
4.5 Summary of Recommendations

Objectives	Recommendations	Major Stakeholders	Potential Outcome
Quality Enhancement: Make Hong Kong “Asia’s Geneva” in watch manufacturing with qualified design and manufacturing capability	<ul style="list-style-type: none"> Develop an impartial Central Lab providing one-stop services 	<ul style="list-style-type: none"> Watch Manufacturers Testing and Certification Service Providers 	<ul style="list-style-type: none"> Testing and certification in precision, accuracy and performance will inspire consumer confidence in Hong Kong-branded/made watch products Align with government policy in developing Hong Kong into a regional testing and certification hub
	<ul style="list-style-type: none"> Introduce the “i4.0 smart factory” strategy to the watch industry 	<ul style="list-style-type: none"> Watch Manufacturers Hardware components providers Software integration system providers 	<ul style="list-style-type: none"> Enhance production flexibility and efficiency by adopting i4.0 strategy Promote the use of advanced technologies for production
Brand Building: Revamp Hong Kong-branded/made watches as lifestyle products with the best value for money for mid-range and high-end markets	<ul style="list-style-type: none"> Launch a Design Recognition Scheme for Hong Kong watches 	<ul style="list-style-type: none"> Watch brand owners Government 	Promote the Made by Hong Kong brand of watch products as lifestyle/fashion products fusing East and West <ul style="list-style-type: none"> Encourage creative designs in colour, shape, technology, functions, etc.

Objectives	Recommendations	Major Stakeholders	Potential Outcome
<p>Talent Development: Develop Hong Kong as a talent hub for the watch industry</p>	<ul style="list-style-type: none"> Establish a Hong Kong WC Academy to develop a structured talent pipeline 	<ul style="list-style-type: none"> Fresh and young individuals interested in watch industry Practitioners in watch industry Education and training service providers 	<ul style="list-style-type: none"> Attract young individuals to horology Fulfil training and development needs for frontline sales Grow Hong Kong's own taskforces to bring about upgrade of existing industry Improve the quality of local watch products
<p>Product Innovation: Diversify from traditional watch to smart wearable devices</p>	<ul style="list-style-type: none"> Set up a Hong Kong Horology R&D Centre 	<ul style="list-style-type: none"> Watch Manufacturers Research Institutes 	<ul style="list-style-type: none"> Support design and product innovation through R&D
	<ul style="list-style-type: none"> Form a Hong Kong Smart Wearable Devices Consortium 	<p>Smart watch-related industries including:</p> <ul style="list-style-type: none"> IT Practitioners Electronics Practitioners Fashion Designers Marketers Healthcare Practitioners 	<ul style="list-style-type: none"> Achieve cross-industry collaboration with a new platform for communication and exchange of business ideas Identify manufacturer's list of reliable and accredited suppliers for app development and electronic components manufacturing

Chapter 5

Conclusion





Watch out, Hong Kong!

Grave Challenges in a Recession

Amid a global industry-wide recession for the past three years, Hong Kong's WC industry is taking the brunt of the downturn compared to its competitors. The local industry is alert to these challenges and prepared to change in the face of it. The same challenges are also opportunities for the industry to upgrade for long-term success.

Adding Value

The local WC industry is famous around the world for its “bang for the buck”—quality goods at competitive prices. It is unwise to undercut other countries on price due to external circumstances and intrinsic limitations. A more realistic solution is to climb up the value chain by boosting performance and quality, not just of the watch itself, but in offering value-added services to customers who are paying for a total experience.

Industry Development: Four Key Areas

Analysis results of industry information and development trend, having considered local contexts, recommend that the Hong Kong WC industry should re-position its focus to mid-range and high-end markets and diversify their business. Four strategies are identified with six recommendations for the industry to maintain its competitive advantages and support continuous development.

Quality Enhancement

Adding value to Hong Kong-made/-branded watches by improving product quality is the way forward for the Hong Kong WC industry's continuous development. Hong Kong can aspire to becoming “Asia's Geneva” in watch manufacturing with qualified design and manufacturing capability. The industry is advised to **improve product quality through testing and certification**. Local watchmakers should set a higher target of product performance by adopting high-level certification criteria. This initiative needs relevant testing services and advisory support, and an impartial central lab providing one-stop services will benefit SMEs. Also, the industry can achieve better product and production quality in terms of flexibility, reliability, and efficiency by adopting the “i4.0 Smart Factory” strategy in watch manufacturing.

Brand Building

Successful brand building strategies will help catch the market's attention and generate business opportunities. A holistic and long-lasting brand building direction is essential to business development. Integrated promotion of Hong Kong-made/-branded watches as lifestyle/fashion products with the best value for money will help the industry revamp Hong Kong's timepieces into higher-grade products for mid- to high-end markets. The establishment of a design recognition scheme sets criteria for “excellent design” and encourages the development of product with creative ideas. The scheme and its associated promotion activities will help foster an image of “Quality Lifestyle/fashion” for Hong Kong WC products.

Talent Development

Comparing with the comprehensive human capital development systems and the social status of skilled workers in leading countries and manufacturers, Hong Kong needs to strengthen its effort in developing talent for the WC industry. Much needs to be done in supporting human capital development, fostering a more professional image, and keeping up the overall impression of the practitioners' performance standard in the industry. A WC Academy should be set up to provide comprehensive education programmes and training to both teenagers and industry practitioners. Promotional events for the professional image of the WC industry will also help attract young talent.

Product Innovation

There are two distinct directions for watch product development, one in traditional watches focusing on craftsmanship, tradition, and extravagance, and the other in smart wearables with multi-functionality and cutting-edge technology as the selling point. Without compromising timekeeping, today's smart wearables excel in three aspects: awareness of the physical environment, connectivity to society, and personalised experience.

New designs and functions can be achieved with advanced technologies such as new materials, manufacturing, and surface treatment. Applied R&D projects should be funded by multiple sources. Developing smart wearables involves multi-disciplinary technologies, spanning biological sensing, electronic communication, data security, and app development. Effective means of connection and collaboration with different industries is vital to product innovation. Further support in developing various sensing devices and corresponding testing facilities are also needed.

An Upgraded Industry Ecosystem

The future of the Hong Kong WC industry demands a transformation of an ecosystem with interdependent industries. When breakthroughs in individual nodes combine forces with prospering cross-industry collaboration, an upgraded ecosystem will emerge to host the sustainable development of the Hong Kong WC industry in the global market.

- END -

Appendix

Acknowledgement:

Association

- HONG KONG WATCH MANUFACTURERS ASSOCIATION LIMITED
- THE FEDERATION OF HONG KONG WATCH TRADES AND INDUSTRIES LIMITED

Company

- ACESTAR CONCEPT LIMITED
- CHIT TAT CLOCK & WATCH COMPANY LIMITED
- DOMINION WATCH COMPANY LIMITED
- ELEGANT JEWELLERY HOLDING LIMITED
- HK PRECISION WC MANUFACTORY COMPANY LIMITED
- KAM YUEN (INTERNATIONAL) WATCH CASE LIMITED
- MEMORIGIN WATCH COMPANY LIMITED
- MOVADO GROUP INCORPORATION
- RENLEY GROUP LIMITED
- SUN INTERNATIONAL TRADING COMPANY LIMITED
- TIME INDUSTRIAL MANUFACTORY LIMITED

Reference:

1. *Hong Kong External Merchandise Trade*, Census and Statistics Department, HKSAR
2. *Watches and Clocks: A Global Strategic Business Report* (13 April 2012)
http://www.prweb.com/releases/watches_market/clocks_market/prweb9400315.htm
3. *The Swiss and world watchmaking industry in 2014*. Federation of the Swiss Watch Industry FH
4. *The Swiss and world watchmaking industry in 2015*. Federation of the Swiss Watch Industry FH
5. *The Swiss and world watchmaking industry in 2016*. Federation of the Swiss Watch Industry FH
6. *The Swiss Deloitte Swiss Watch Industry Study 2016*. Deloitte AG
7. *Wearables sales revenue worldwide by category from 2015 to 2021*
<https://www.statista.com/statistics/641865/wearables-sales-by-category-worldwide/>
8. *The Swiss Deloitte Swiss Watch Industry Study 2017*. Deloitte AG
9. *Currency fluctuations and luxury globe-trotters boost global personal luxury goods to over a quarter trillion Euros* (29 October 2015) <http://www.bain.com/about/press/press-releases/Luxury-Report-Fall-2015-Press-Release.aspx>
10. *Wrist Watch Industry Statistics* (01 August 2016) <http://www.statisticbrain.com/wrist-watch-industry-statistics/>
11. *1969: Seiko's Breakout Year* (20 December 2009) <https://www.watchtime.com/featured/1969-seikos-breakout-year/>
12. *Watches & Clocks Industry in Hong Kong* (09 August 2017) <http://hong-kong-economy-research.hktdc.com/business-news/article/Hong-Kong-Industry-Profiles/Watches-Clocks-Industry-in-Hong-Kong/hkip/en/1/1X000000/1X001DHG.htm>
13. Census and Statistics Department, HKSAR Government
14. Member Directory, Hong Kong Watch Manufacturers Association Limited
15. *Metal Injection Molding for watches, eyewear and other consumer products* <http://www.pim-international.com/metal-injection-molding/applications-for-mim-v-consumer-products/>
16. *Anti-fingerprint Coating Makes Fingerprints Invisible*
https://www.ifam.fraunhofer.de/content/dam/ifam/en/documents/Adhesive_Bonding_Surfaces/plato/anti-finger_en_fraunhofer_ifam.pdf
17. 瑞士钟表制造业概况及对我钟表业发展启示, "A Survey of the Swiss Watchmaking Industry and Inspiration for the Development of the Watch Industry in China" (17 May 2007)
<http://ch.mofcom.gov.cn/article/ztdy/200705/20070504678844.shtml>
18. Hartley, J (2013). *Flexible Automation in Japan*. Springer Science & Business Media
19. *A Guide to Swiss Watch Certification and Testing, From COSC to Chronometrique+* (07 April 2014).
<http://watchesbysjx.com/2014/04/feature-a-guide-to-swiss-watch-certification-and-testing-from-cosc-to-chronometrique.html>
20. *People in education 2017 edition*. The Swiss Federal Statistical Office (FSO)
21. *Report of the Task Force on Promotion of Vocational Education* (July 2015). Task Force on Promotion of Vocational Education
22. *Hong Kong Manufacturing SMEs: Preparing for the Future Industry Situation Report Watches & Clocks* (2010). The Federation of Hong Kong Industries



Watch out, Hong Kong!

23. 香港鐘錶業發展指南(Practical Guidebook for New Development of Hong Kong Horological Industry) (2013). The Federation of Hong Kong Industries
24. *An emerging middle class* (2012)
http://oecdobserver.org/news/fullstory.php/aid/3681/An_emerging_middle_class.html
25. *China's Middle-Class Consumers: Preference and Spending Trend* (18 July 2017).
<http://economists-pick-research.hktdc.com/business-news/article/Research-Articles/China-s-Middle-Class-Consumers-Preferences-and-Spending-Trends/rp/en/1/1X000000/1X0AAQP5.htm>
26. *The Unprecedented Expansion of the Global Middle Class - An Update* (2017). The Brookings Institution



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