



IECQ HSPM SCHEME & QC 080000: CURRENT STATUS

Chris Yau

WG 5 Convener

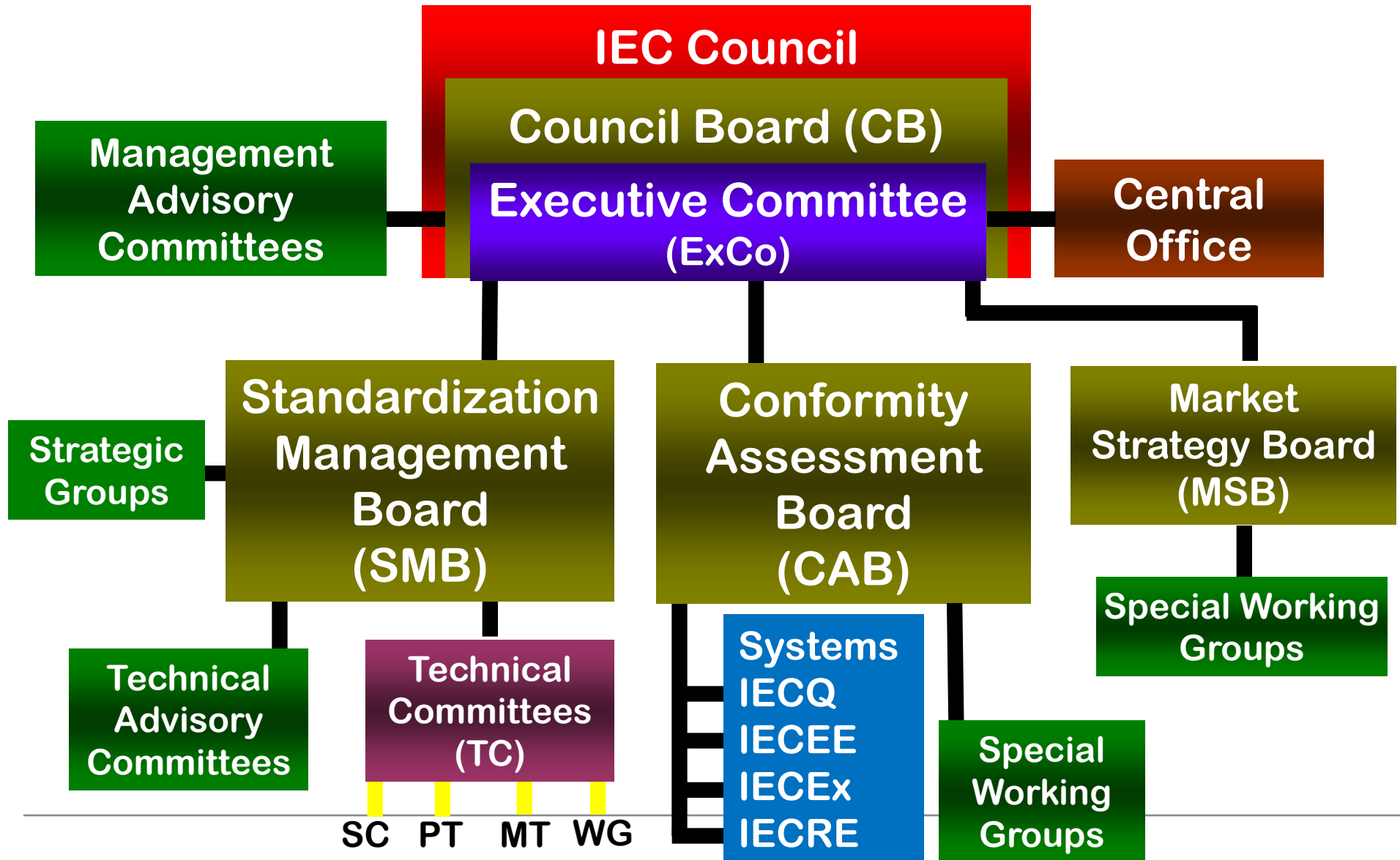
CABC Vice-Chairman



WHO IS IEC?

- IEC is the *International Electrotechnical Commission*
- Founded in 1906 to promote international co-operation on all questions of standardization and related matters in the fields of electro-technology, including conformity assessment.
- IEC provides a platform to companies, industries and governments for meeting, discussing and developing the International Standards they require. The world's leading organization for the preparation and publication of international standards for electro-technology.

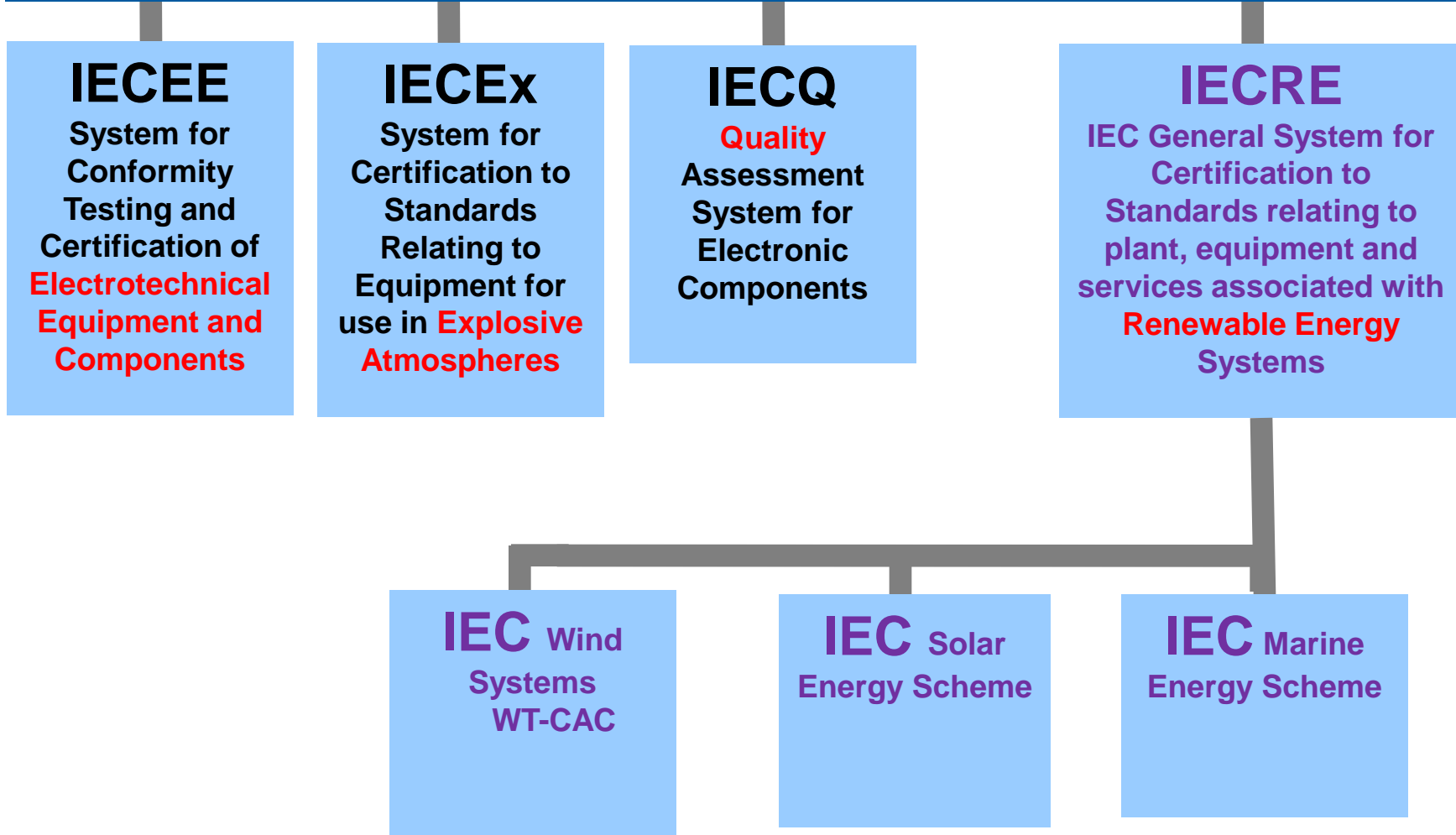
STRUCTURE OF THE IEC





CONFORMITY ASSESSMENT

CAB - Conformity Assessment Board





WHAT IS IECQ?

- IECQ (IEC Quality Assessment System for Electronic Components) is a worldwide approval and certification system covering the supply of electronic components and associated materials and assemblies (including modules) and processes.
- It uses quality assessment specifications that are based on International Standards prepared by the International Electrotechnical Commission (IEC) or National Standards where an IEC Standard does not exist.



IECQ SCHEMES

IECQ System
www.iecq.org

Approved Process Scheme (IECQ AP)
E.g. ESD etc.

Counterfeit Avoidance Programme (IECQ CAP)

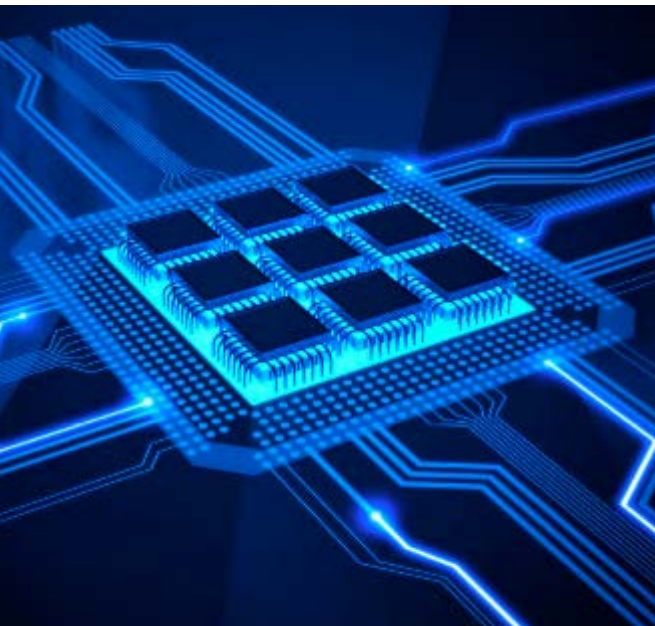
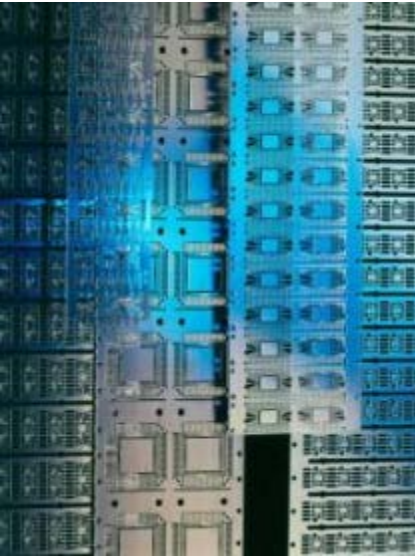
Approved Component Scheme (IECQ AC)
(Production of Components +Assemblies)

Automotive Qualification Programme (IECQ AQP)

IECQ HSPM Scheme “IECQ QC 080000”
Hazardous Substance Process Management

IECQ Avionics Scheme (IECQ ECMP)
Electronic Component Management Plan

IECQ Independent Testing Laboratory Scheme
(IECQ ITL)





IECQ QC 080000:2012

- Provides the management system framework
- Covers manufacturers, assemblers and suppliers of *electronic components* and related assemblies (including modules), and associated materials and processes.
- Ensures that hazardous substances are managed and controlled by the organization according to declared regulations + standards



IECQ QC 080000 AND QMS

- IECQ QC 080000 adds to ISO 9001 or other equivalent quality management system standards
- IECQ QC 080000 includes the requirements for managing hazardous substances on top of the quality management system
- ISO 9001 or the equivalent QMS standard **MUST** be read in conjunction with IECQ QC 080000



SAME RULES FOR EVERY CB

- Rules published in IECQ 03-5, which includes standard assessor days for all IECQ CBs
- IECQ CB assessment team have competency on the IECQ QC 080000 specification, the core processes of the organization being assessed, and the knowledge of the associated hazardous substances



SAME RULES FOR EVERY CB

- All manufacturing locations are assessed, no sampling
- Deficiencies are not to be recorded or reported as Observations or Opportunities for Improvement
 - Either complied or not complied

Replaces multiple 2nd Party assessments by buyers with one “IECQ Assessment”.



Benefits to Industry

- Cost savings
- Savings in resources
- Consistency in supplier assessment
- Confidence in supply chain
- Online certificates

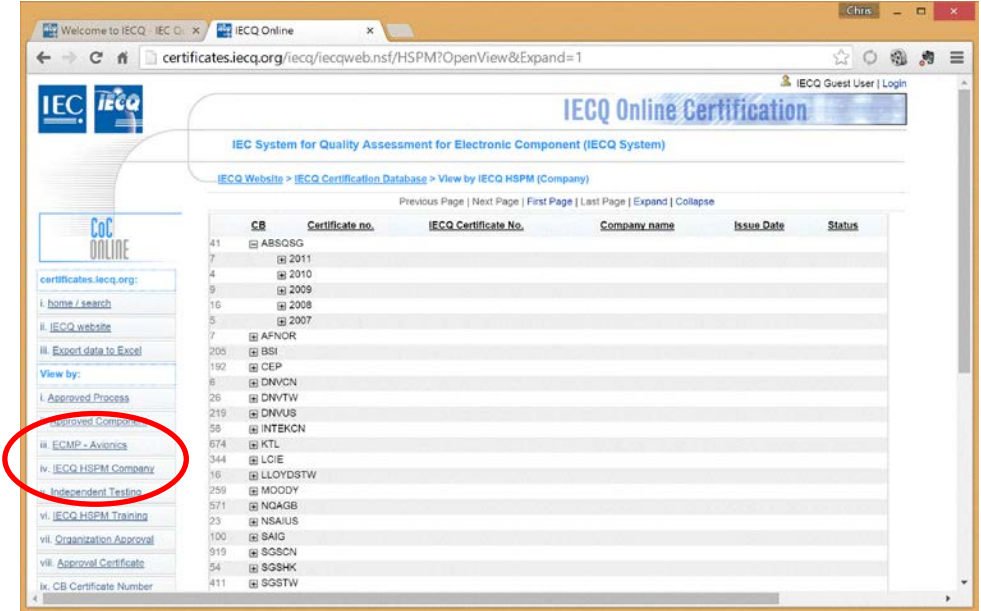
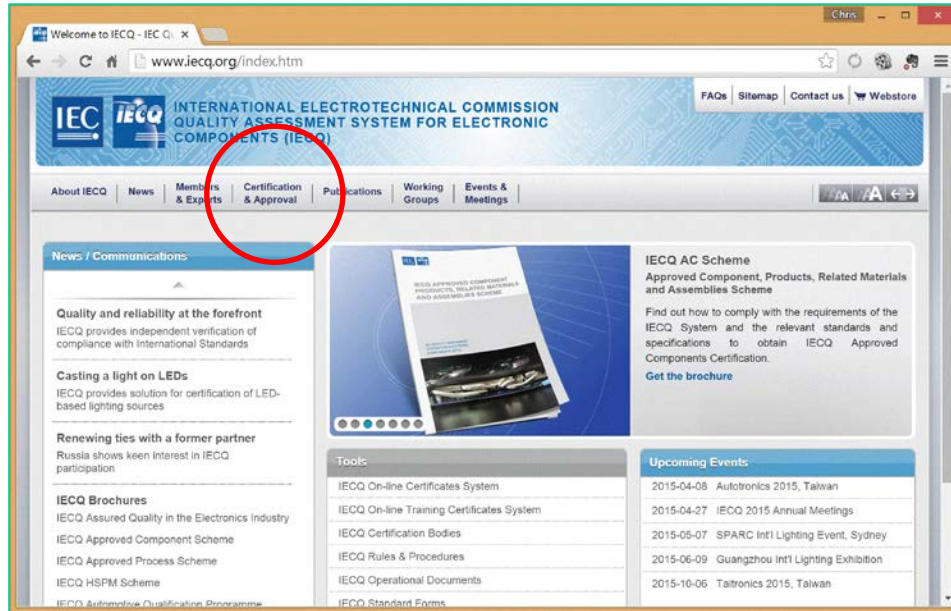


IECQ HSPM COMPETITIVENESS

- One single set of Rules and Operational Procedures for *all* IECQ approved Certification Bodies (CBs) to follow
- *All* IECQ CBs undergo the single assessment process
- Single certificate format used by *all* IECQ CBs worldwide
- All certificates issued via the IECQ online system and located in the *one place* with public access and search
 - If the certificate is not showing on the IECQ website – it does not exist!!



ONLINE CERTIFICATES



IECQ Online Certificates

- All certificates located
- Public access
- Search features
- Online version is the master



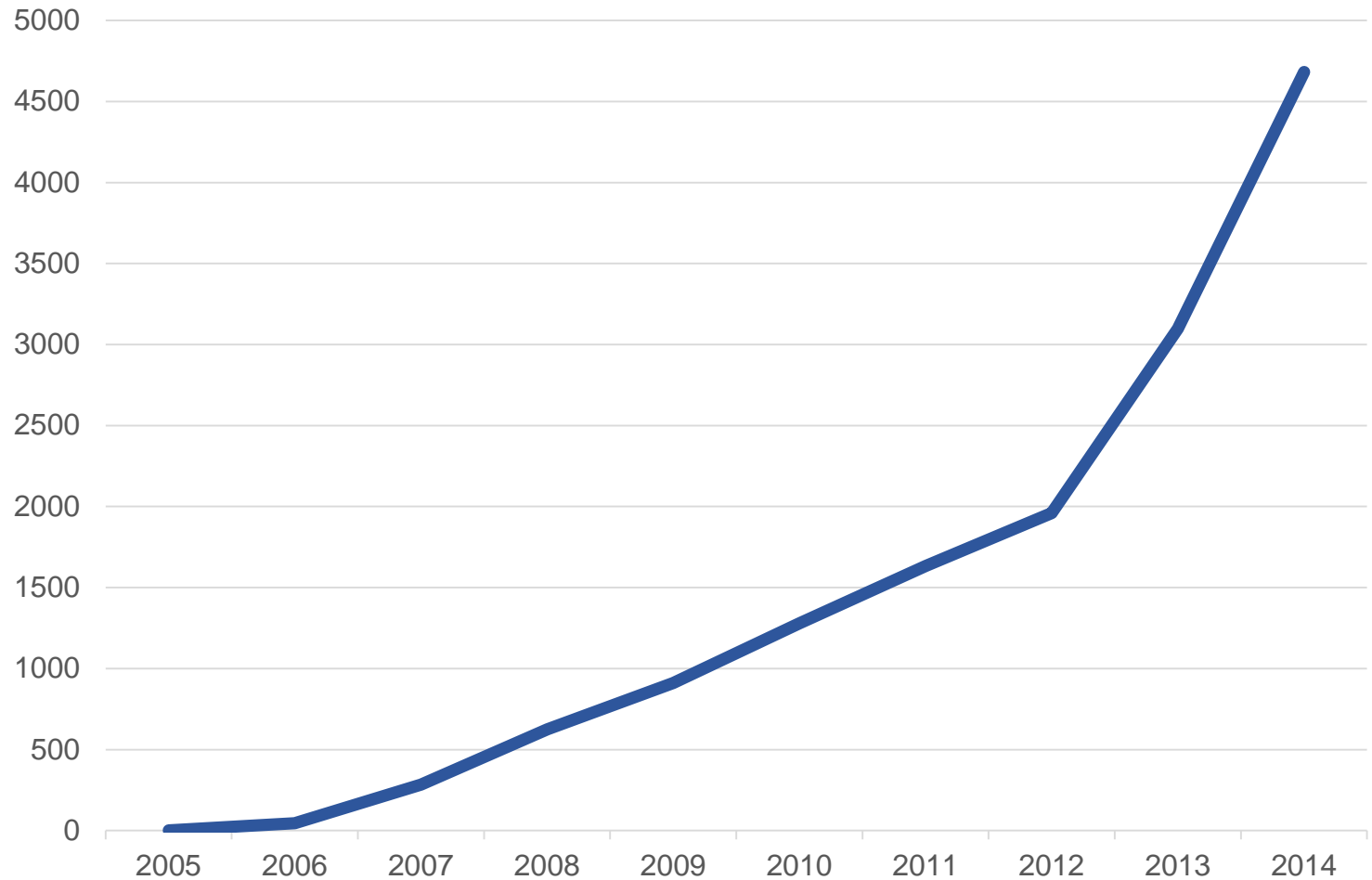
IECQ HSPM CERTIFICATION BODIES



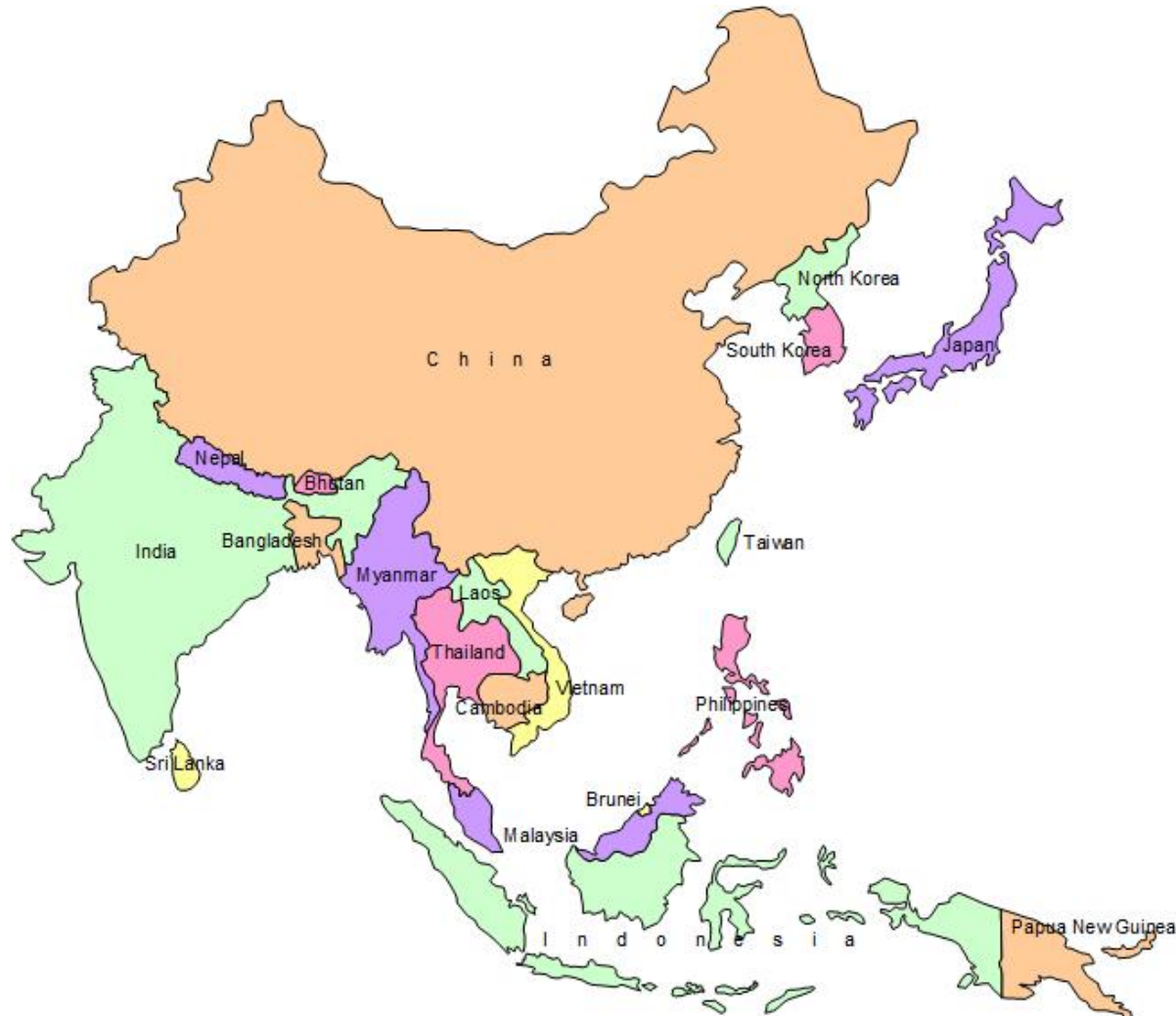
16 CBs participated



CERTIFICATES GROWTH CONTINUES!



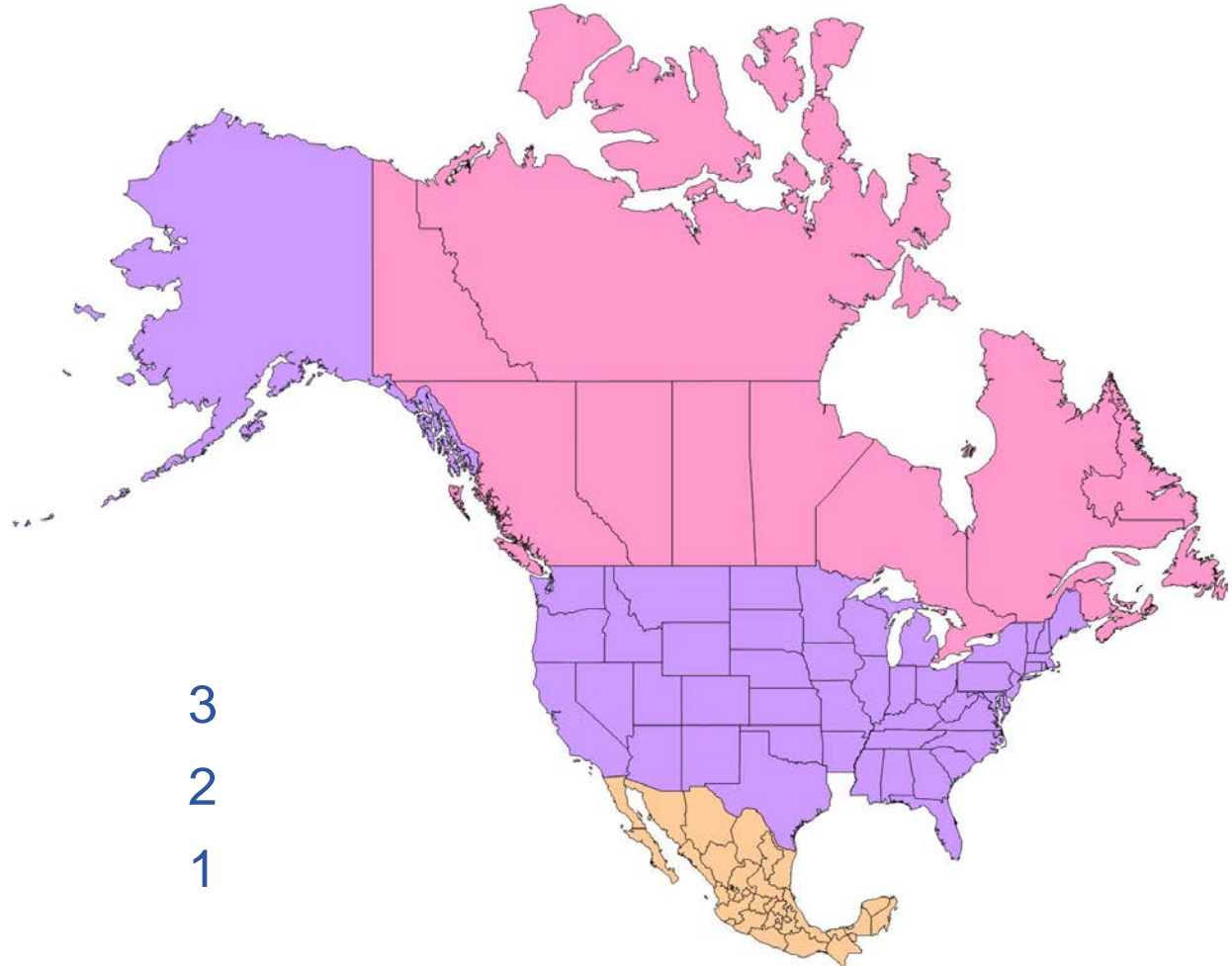
NUMBER OF CERTIFICATES - ASIA



as of 22 Feb 2015

NUMBER OF CERTIFICATES – NAM

Mexico	3
US	2
Canada	1



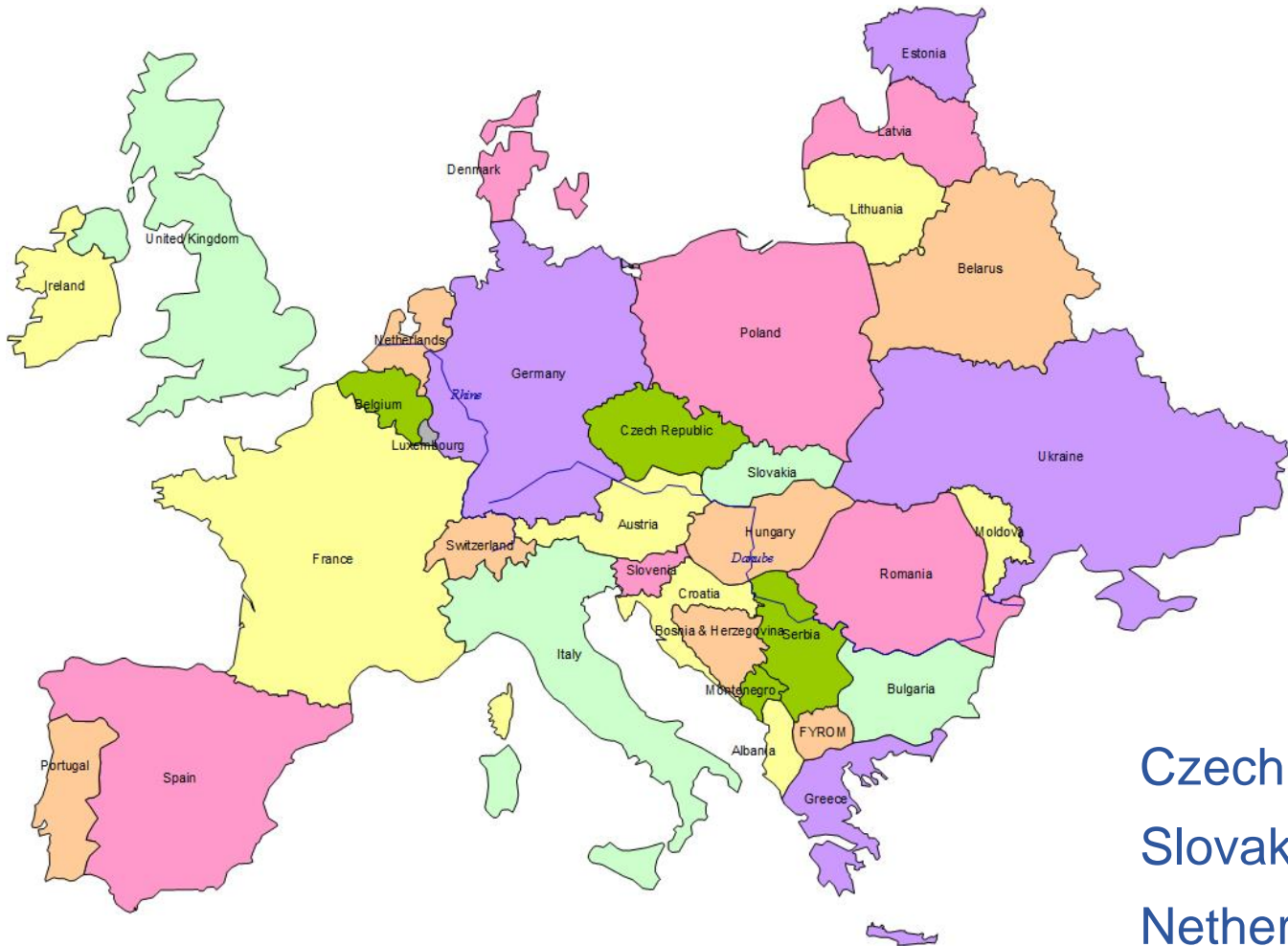
as of 22 Feb 2015

NUMBER OF CERTIFICATES – SAM



Brazil	8
Argentina	2

NUMBER OF CERTIFICATES – EU



as of 22 Feb 2015

NUMBER OF CERTIFICATES

- 77% are in China
- 98% are in the Greater China region
- Many certified sites in China, especially those in the Pearl River Delta region, are subsidiaries of HK companies



COMING TREND - A REMINDER

22 July 2014

Exemption lifted:
Medical devices
Monitoring and
control
instruments

22 July 2017

Exemption lifted:
Industrial
monitoring and
control
instruments

22 July 2016

Exemption lifted:
In-vitro diagnostic
medical devices

22 July 2019

All E&E
equipment
covered except
those explicitly
exempted



WG5 WORKS – IECQ QC 080000:2012

- To accommodate other hazardous substances directives and regulations other than RoHS, e.g.
 - Compliance assessment, preparation of technical file, preparation of self-declaration, use of markings, change control, product recall in re-casted RoHS
 - The information communication within the supply chain in REACH
- Better alignment and consistency with ISO 9001:2008
- Remove the ambiguity and clarify the intention of some requirements in IECQ QC 080000:2005



WG5 WORKS - FUTURE DEVELOPMENT

- Revising IECQ QC 080000 to align with ISO 9001:2015
 - Monitoring the development of ISO 9001:2015.
 - Investigating the feasibility of adopting the new ISO Annex SL format
- To review and strengthen the training and auditor qualifications of the IECQ HSPM schemes



OTHER SCHEMES OF INTEREST TO HK INDUSTRY

IECQ System
www.iecq.org

Approved Process Scheme (IECQ AP)
E.g. ESD etc.

Counterfeit Avoidance Programme (IECQ CAP)

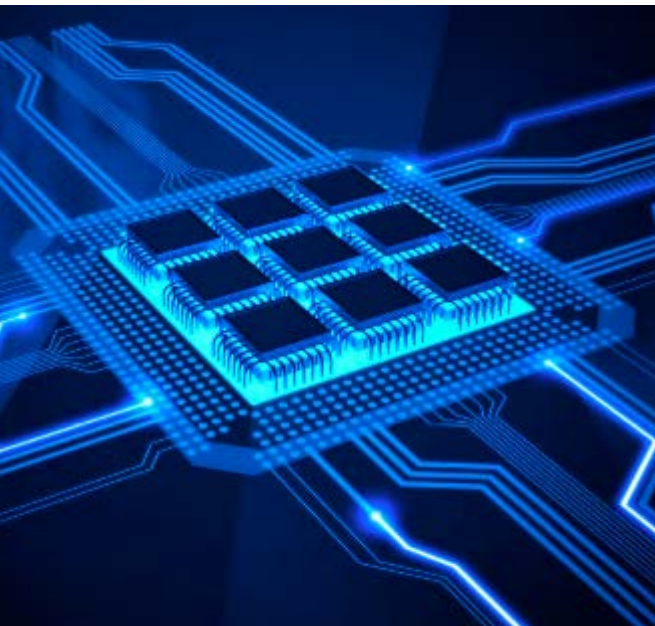
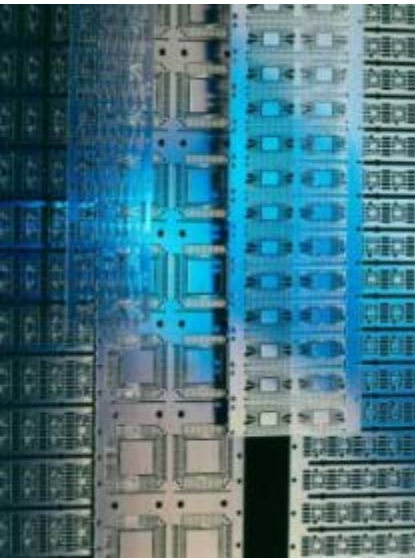
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Electronic Component Management Plan

**IECQ Independent Testing Laboratory Scheme
(IECQ ITL)**





IECQ – FUTURE DEVELOPMENT

- Development and growth of the CAP and AQP Programmes
- Development of IECQ CAP Specification for other industries other than ADHP (aerospace, defense, high-performance) industries.
- LED in lighting certification initiative (to be launched in Q3 2015)
- Consideration of supply chains beyond electronics

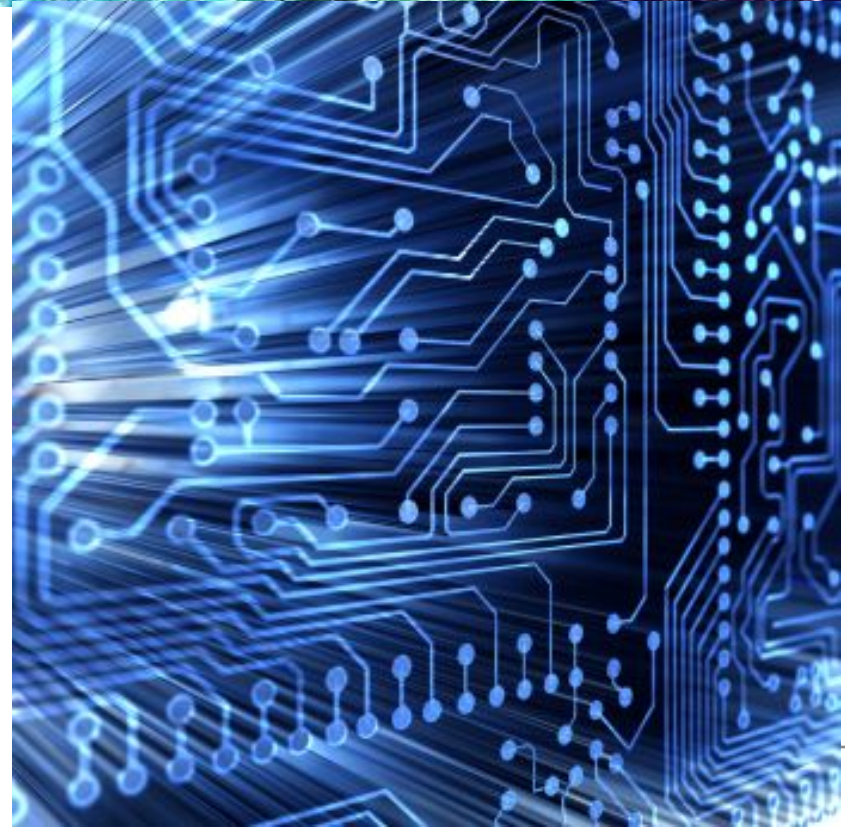
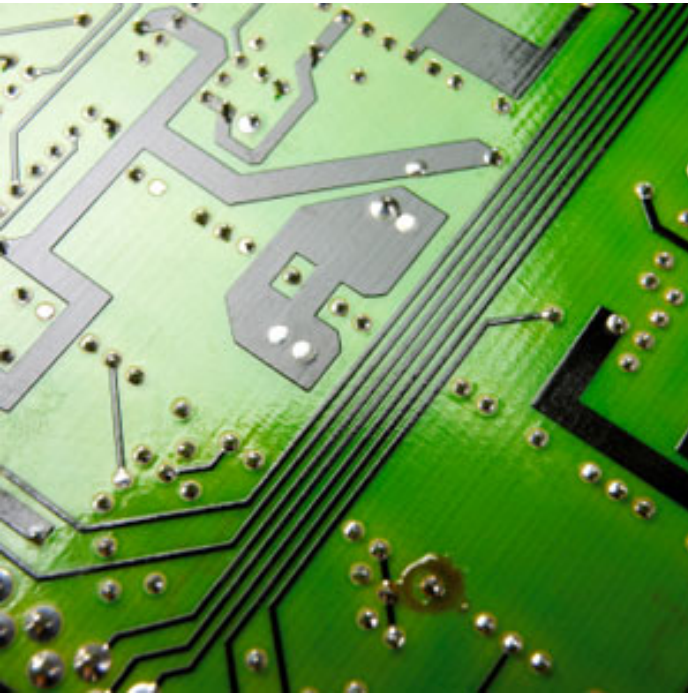
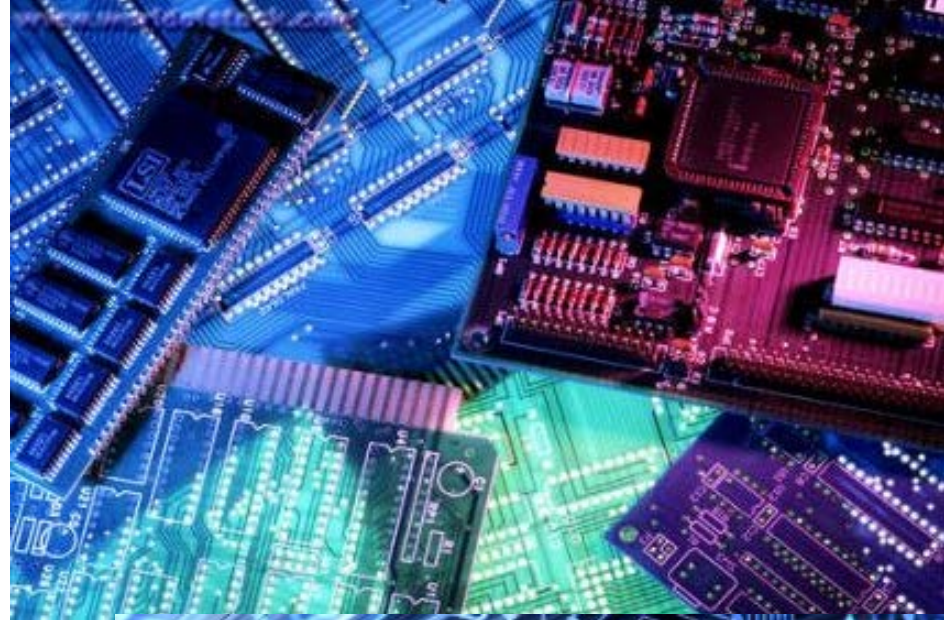


IECQ – FUTURE DEVELOPMENT

- Membership growth
- Co-ordinated PR with IECEx, IECEE and future IEC Systems, in particular joint global seminars



THANK YOU



WOOX

INNOVATIONS

How to Manage Hazardous Substance Effectively in Electronics Industry

如何有效在電子行業管理有害物質

Stanedy Yue 余錦輝

Senior Manager, Sustainability and Planning

高級經理，可持續發展和規劃

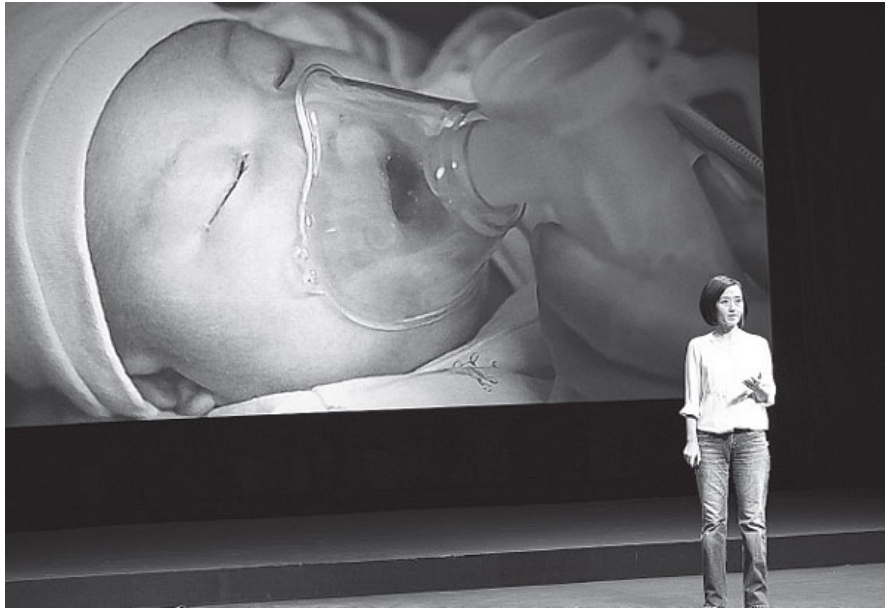
Mar 20, 2015



A Gibson Brands company







Content 內容

1. Company Introduction 公司簡介
2. Circular Economy 循環經濟
3. Green Innovation 綠色創新 – Green Products 綠色產品
4. Management of Hazardous Substances 有害物質管理
5. References 參考



WOOX Innovations

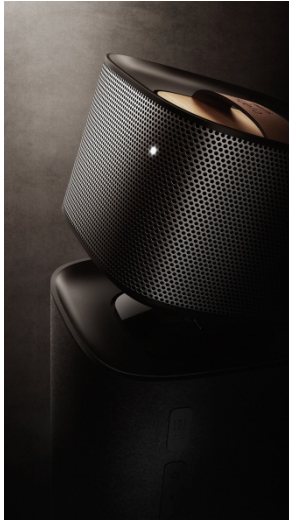
WOOX
Innovations
joins Gibson
Brands

Gibson®
BRANDS

WOOX Innovations: a start-up with a 122-year heritage 122年的傳統



Audio
音頻



Home Cinema
and Video
家庭影院和視頻



Headphones
耳機



Smart Home
智能家居



Home Comms
家用通訊



Accessories
配件

A Gibson Brands
company
Gibson Brands 子公司

Founded in
2013
於2013成立

Global footprint
and leadership
環球足跡與領導力

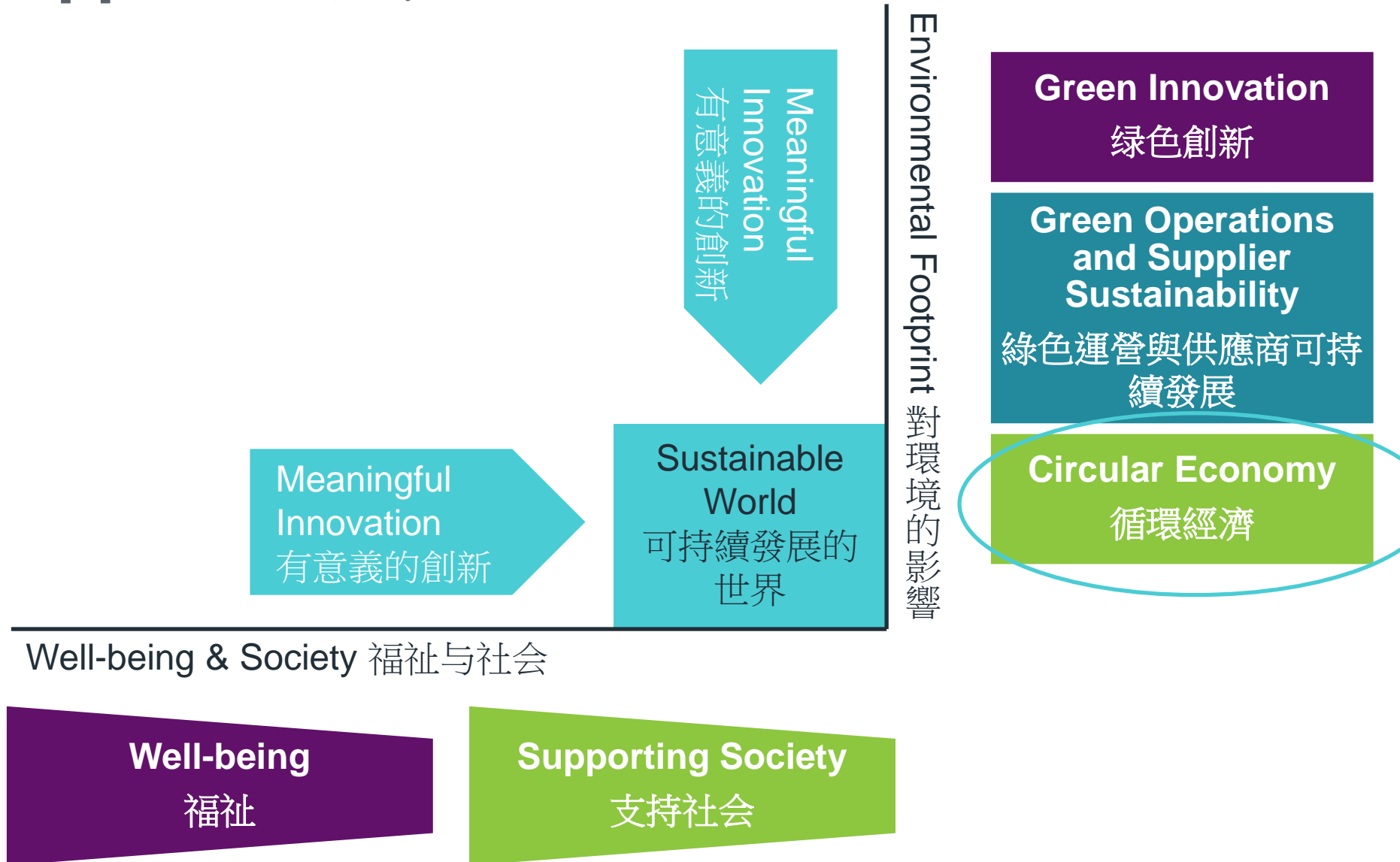
At WOOX Innovations we are dedicated to **delivering meaningful innovation in sound and connected entertainment.**

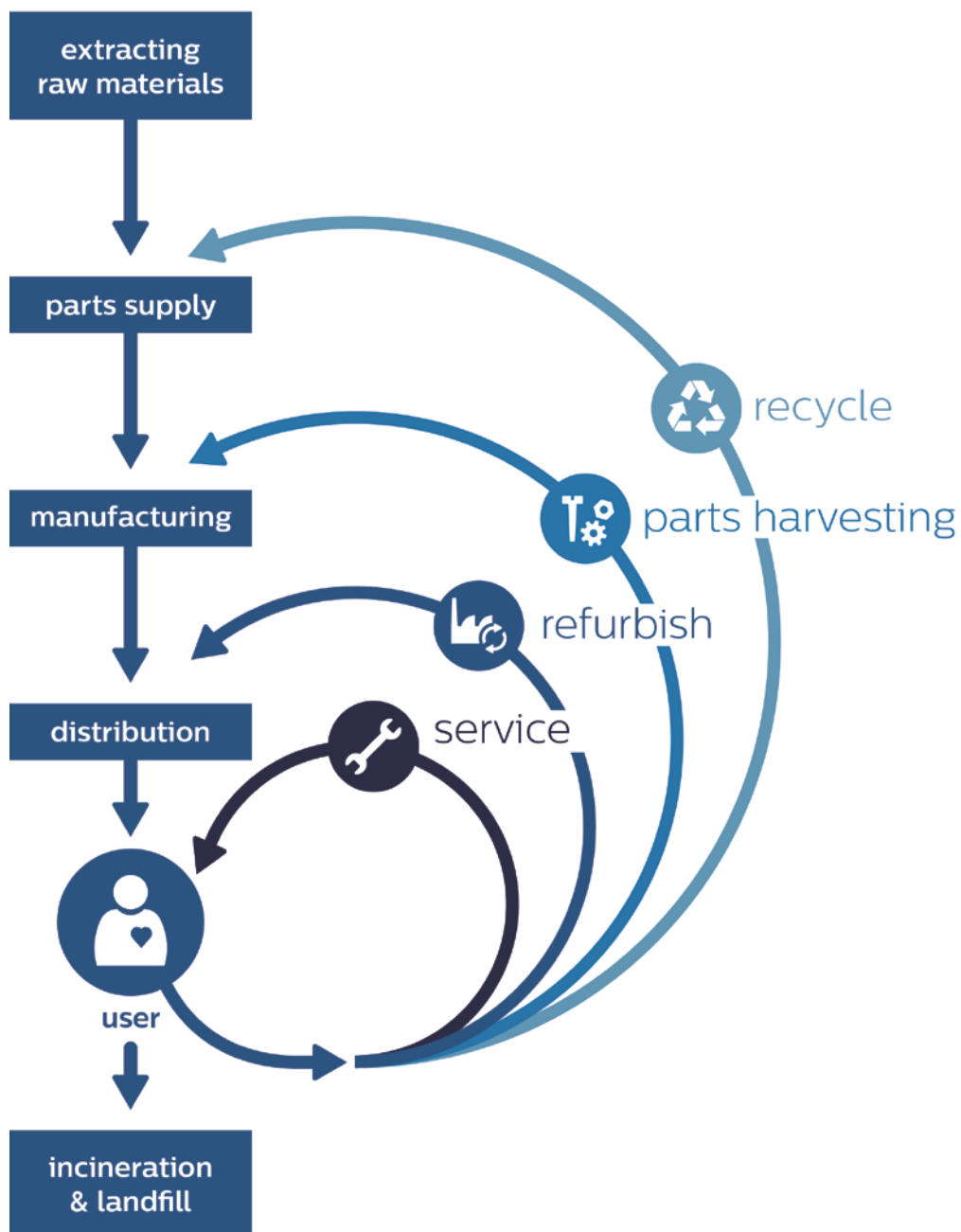
致力於在聲音和互聯娛樂方面發展有意義的創新。

From great sound quality, to advanced connectivity and sophisticated design, we strive to improve the entertainment experience.

從傑出的聲音質量，到高級連通性和精密的設計，我們力求改善娛樂體驗。

Approach 途徑

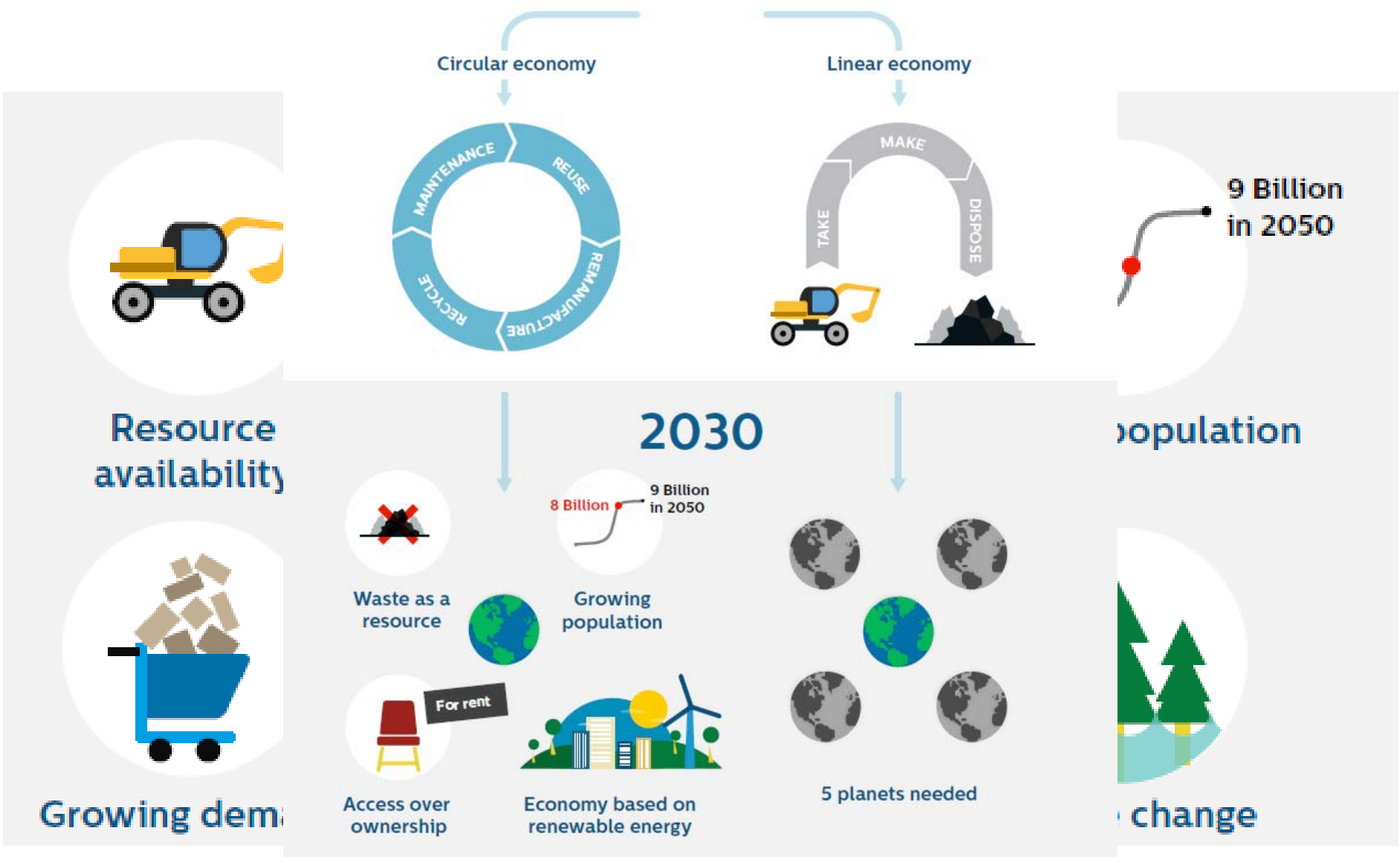




the circular economy

循環經濟

Circular Economy 循環經濟



Green Innovation 綠色創新

– Green Products 綠色產品



asimpleswitch.com

Green Innovation 綠色創新

– Green Products 綠色產品

Products and packaging 產品和包裝.....

- will not let any energy and materials go to waste
將不會浪費任何的能源和材料
- will be fully fit for continuous recovery and reutilization
將完全符合持續回收和重複利用
- will be free of any substances that will harm people and the environment
將無任何對人類和環境有害的物質
- our products will exceed the lifetime expectations of our customers
我們產品的生命週期將超過客戶期望
- our products do not harm the global society in any way
我們的產品不以任何方式損害全球社會

Green Innovation 綠色創新

– Green Products 綠色產品

<0.1W no
load<0.1W空載



**Energy
consumption**

No use of PVC
and EPS
不使用PVC和
EPS



Packaging



Substances

Optimization of
Volume ratio
packaging/
product 體積比包
裝/產品的優化



Weight

Recycled
content in
packaging 包
裝再生含量



**Recycling
and disposal**

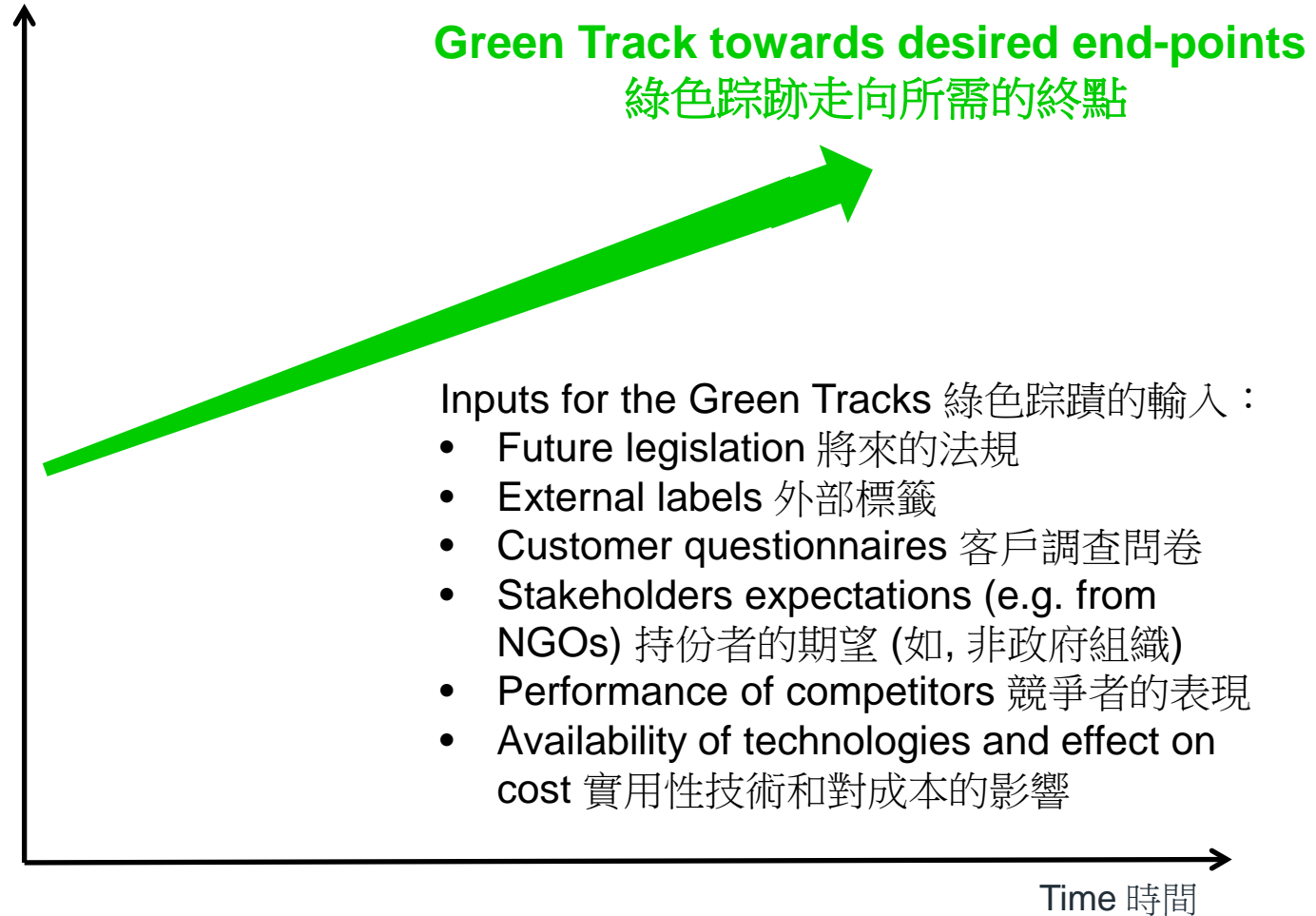


**Lifetime
reliability**

PVC/ BFR free
不含 PVC/BFR

Green Innovation 綠色創新

– Green Products 綠色產品



Green Innovation 绿色创新

– Green Products 绿色产品 2014



AE1500



BT2000



SHP9500



SFL7000



AECS7000



BDP7750



M110

Management of Hazardous Substances

有害物質管理



We need to consider

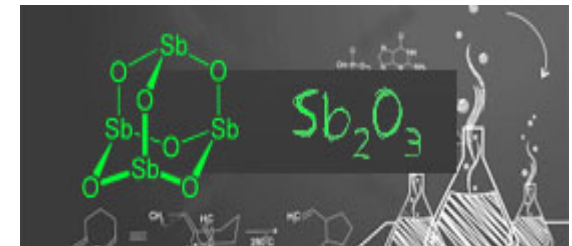
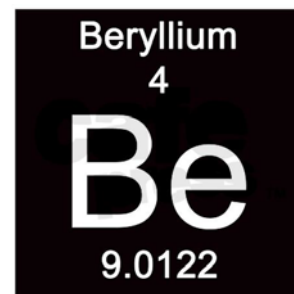
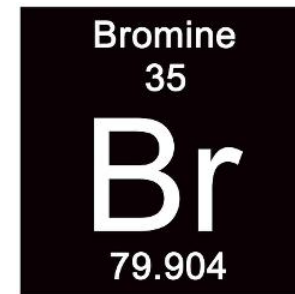
我們需要考慮



What industry is doing?

業界在幹什麼？

- Hazardous substances under spotlight
焦點的有害物質
 - PVC 聚氯乙烯
 - Brominated flame retardants 溴化阻燃劑 (BFRs)
 - Antimony trioxide 三氧化二銻
 - Beryllium & Beryllium compounds 鈹及鈹化合物



Source: [Greener Gadgets: Designing the future](#)

What industry is doing?

業界在幹什麼？

- In 2010, the Industry Association INEMI published a timeline showing that halogen-free components for PCs would be widely available in the supply chain by the end of 2011
2010年，行業協會iNEMI 公佈的時間表顯示，到2011年年底無鹵素成分的個人電腦將廣泛使用
- Companies are actively lobbying for EU regulation to restrict the use of all PVC and BFRs
積極遊說歐盟法規，限制所有PVC和溴化阻燃劑的使用
- Publishes extensive Restricted Substances List for electronics manufacturing, aims not only restricting hazardous substances in products, but also in manufacturing
發布全面的電子製造過程的限用物質清單，目的不僅僅是限制在產品中的有害物質，而且是在製造過程的要求

Source: [Greener Gadgets: Designing the future](#)

Regulated Substances List (RSL)

限制物質清單

- http://www.woox.com/en/Documents/WOOX_RSL.pdf
- WOOX Innovations complies with all relevant legislative environmental requirements including the restriction of use of hazardous substances
- WOOX Innovations 符合所有相关环境法规要求，包括限制有害物质的使用
- The list contains minimum requirements related to:
列表包含與最低要求:
 - Federal, state, county or municipal law, regulation, ordinance or code,
聯邦，州，國家或市政法律，法規，條例或準則
 - WOOX INNOVATIONS' own requirements
WOOX INNOVATIONS 自身的要求
- Updated regularly to reflect the regulatory changes
定期更新，以反映法規的變化
 - e.g. RoHS, REACH POPs, CPSIA, California Prop. 65, batteries, packaging, CARB, etc.

Regulated Substances List (RSL)

限制物質清單

Substances 限制物質	CAS No. CAS 號碼	EC No. EC 號碼	Maximum concentration Limit ppm (mg/kg) or as given in the Table 最大濃度限值 百万分率 (毫克/千克) 或如表中指定	Application 應用
Formaldehyde 甲醛	50-00-0	200-001-8	--	Applied in composite wood products or components (plywood, particle board and MDF) and textiles 在混合木材产品或化合物 (合板、刨花板和中密度纤维板) 和纺织品中
Formaldehyde 甲醛		ASTM E1333	0.05 - 0.13	Applied in emissions from hardwood plywood, other wood-based materials and non-wood materials (see remark 6) 源自硬木胶合板、其他木材基材料和非木材基材料 (参见备注 6) 的甲醛排放物
Lead and lead compounds 铅和铅化合物	--		90	Applied in substrate of product for children 12 years of age or younger 12 岁以下小孩的产品的表面涂层
Lead and lead compounds 铅和铅化合物	--	--	100	Applied in substrate of product for children 12 years of age or younger 12 岁以下小孩产品基材

1. Regulated substances
限制物質

2. CAS No. & EC No
CAS 號碼與 EC 號碼.

3. Measurement methods
測試方法

4. Maximum concentration value
最大濃度限值

5. Application
應用

BOMCheck Declarations 申報

- BOMcheck, an online system for electronics industry that allows suppliers to share their REACH/ROHS and other substance requirement data with multiple manufacturers.
BOMcheck 是一個在電子產業中，能讓眾多生產商共享REACH/ROHS及其他關於物質要求的數據。
- ECHA updates this list at least twice a year, we refer to the <http://echa.europa.eu/web/guest/candidate-list-table> for the most recent list of candidate substances.
歐洲化學品管理局每年至少更新這個清單兩次，我們需要參照 <http://echa.europa.eu/web/guest/candidate-list-table> 獲取最新的候選物質清單
- BOMcheck will also contain the most recent list of SVHC and separates between those SVHC which are likely to be found in electronics and those that are not.
由于BOMcheck 也將包含SVHC 的最新清單，並區分哪些SVHC 可能會在電子產品中使用，哪些不會

BOMcheck✓.net

Compliance check 合規性檢查

1. RoHS Summary RoHS 匯總
2. Product Risk Assessment + Due-Diligence Test
產品風險評估 + 盡職調查測試
3. Suppliers assessment/ audit – management of hazardous substances
供應商評估/ 審核 – 有害物質管理



Summary in Hazardous substances management 有害物質管理的關鍵

- Hazardous substances management is one of the subjects of company's risk Management 有害物質管理是公司風險管理項目之一
- Key messages 關鍵信息:
 - There is no risk free in hazardous substances management 沒有無風險的有害物質管理
 - Risk minimization and managing risk 風險最小化和和管理風險
 - It is a matter of risk management by installing 它是風險管理通過執行
 1. Stakeholders concerns/expectations management 利益相關者關注/預期管理
 2. Sound Management system (e.g. ISO 9001, ISO 14001, IECQ080000) 完善的管理體系 (如ISO9001，ISO14001，IECQ080000)
 3. Due diligence actions 盡職調查行動
 4. Cost and effect analysis 成本及效果分析

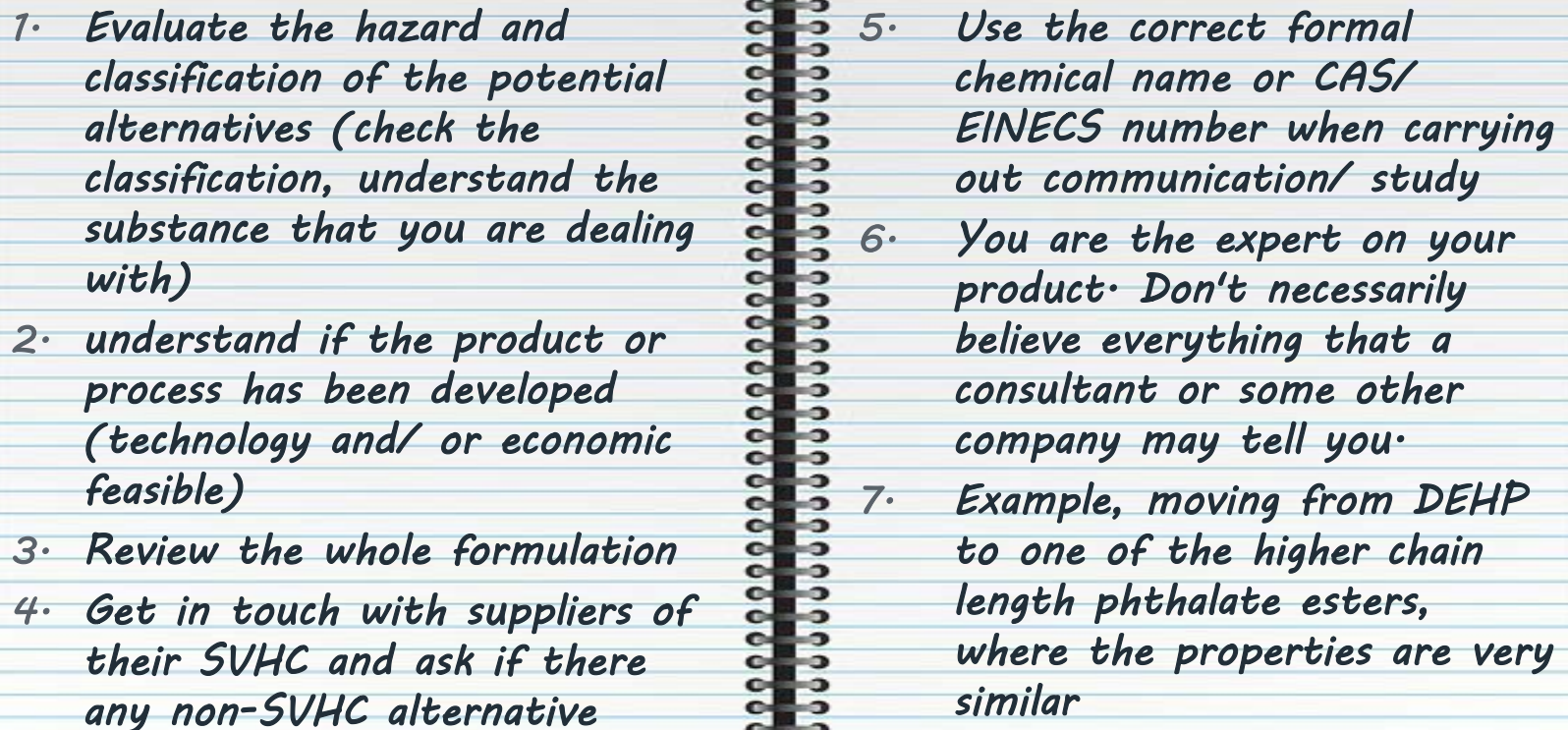
Risk Evaluation – Materials vs Chemicals

風險評估 – 材料 vs 化學物質

High risk material	RoHS	CA Prop 65 (Lead content)	Phthalates	SCCP	PAH	Organotin	Azo dye	Flame retardant (TEPA, TRIS)	Flame retardant (TDCPP, TCEP, TDBPP)	Heavy metals in Packaging	Battery Directive - Mercury content
PVC	√	√	√	√	√	√				√	
Plastic (other than PVC)	√	√		√	√					√	
Rubber	√	√	√	√	√	√					
Fabric	√	√					√	√			
Synthetic leather	√	√	√	√	√	√	√	√			
Foam	√	√	√	√	√				√		
Glue/adhesive			√								
Solder	√										
Battery											√

Substituting SVHCs

ECHA Newsletter (Feb 2015), Substituting SVHCs – how to do it successfully

- 
1. Evaluate the hazard and classification of the potential alternatives (check the classification, understand the substance that you are dealing with)
 2. understand if the product or process has been developed (technology and/ or economic feasible)
 3. Review the whole formulation
 4. Get in touch with suppliers of their SVHC and ask if there any non-SVHC alternative
 5. Use the correct formal chemical name or CAS/ EINECS number when carrying out communication/ study
 6. You are the expert on your product. Don't necessarily believe everything that a consultant or some other company may tell you.
 7. Example, moving from DEHP to one of the higher chain length phthalate esters, where the properties are very similar

Source: [ECHA Newsletter \(Feb 2015\), Substituting SVHCs – how to do it successfully](#)

替代 SVHC

ECHA Newsletter (Feb 2015), Substituting SVHCs – how to do it successfully

1. 評估危害和潛在替代物的分類
(檢查分類，理解你所處理的物質)

2. 理解產品或方法是否已研發
(技術和或經濟可行性)

3. 複審整個配方

4. 聯繫供應商，詢問他們是否有非SVHC的替代物

5. 當進行交流／學習時，使用正確的正式的化學名稱或CAS/ EINECS號碼

6. 你是製造產品的專家。不必完全相信顧問或者其他人的意見

7. 舉例，從DEHP 轉移到其他更長鏈的鄰苯二甲酸酯，其特性是非常相似的

Source: [ECHA Newsletter \(Feb 2015\), Substituting SVHCs – how to do it successfully](#)

References 参考

1. WOOX Innovations – Quality & Sustainability <http://www.woox.com/en/about-us/quality-sustainability>
2. Greenpeace, “Green Gadgets: Designing the Future”
<http://www.greenpeace.org/international/en/campaigns/detox/electronics/Guide-to-Greener-Electronics/Green-Gadgets/>
3. ECHA Newsletter <http://newsletter.echa.europa.eu/web/newsletter>



**"Sustainability is all about our future generations, Pls act now
可持續發展是所有關於我們的子孫後代，請現在就採取行動 !!"**

WOOX

INNOVATIONS

Thank you!



Chemical Management System

Speaker:

Dr. Rodney Thu

Chemical Technical Manager, Hasbro Far East Ltd.

Why do we need to know?

Pre-2007

Requirements: Lead & 7 other heavy metals,
6 Phthalates, EU RoHS

2007 & 2008

A year of recalls

Post-2008

(It's a different world out there!)

Regulatory actions

US – CPSIA, State Laws

EU – Toy Safety Directive (TSD), REACH

Bans on Phthalates (DEHP, DBP, BBP, DINP, DIDP etc.)

Mandatory testing & certification



Why do we need to know?

June 2007: The *Thomas and Friends Wooden Railway* toys were recalled due to risks of **Lead Poisoning** from the **Paint**.

November 2007: A popular children's toy, *Bindeez* (also known as Aqua Dots, in the United States), was recalled when it was discovered that **1,4-butanediol** had been substituted for 1,5-pentanediol in the bead manufacturing process. The human body metabolises the substance to form the **anesthetic GHB**.

November 2007: About 175,000 *Curious George* 12-inch plush dolls with plastic faces were recalled due to the risk of **Lead exposure and poisoning**.

June 2010: *McDonalds* recalled the Shrek Forever After cups due to risks of **Cadmium poisoning** from the cups' paint.

September 2010: Fisher Price recalls 10-million products, including enough toys to merit this as the largest toy recall in history

Many more...



Why So Many Chemical Regulations?

Market Drivers

Regulators

(Federal, State and Global)

- Evolving chemical requirements with more focus on formulations/substances.
- State Level activity increasing.
- Global requirements increasing

Media/NGO Activity

- Center for Environmental Health Reports/Studies
- Safe Kids Worldwide
- Kids In Danger
- Greenpeace

Retailer Requirements

- Market requirements
- Brand requirements
- Entering new emerging markets (i.e. growth potential)

Consumer Demand

- Demanding more “green” products
- Environmentally conscientious



Chemical Data Management/Solutions

Lists, Lists and More Lists

WA & VT
CHCC

Minnesota
CoHC

California
Green
Chemistry

Maine
CHC

NTP
Carcinogens

CPSC
CPSIA

EU
RoHS

EU
TSD

Canada
CMP

REACH
SVHC

CA
Prop 65

Japan
PAC



Worldwide Regulations

Hazardous substances

- CMR
- Endocrine disruptor
- Skin/eye irritation
- Allergenic
- Toxic to environment

EU REACH
SVHC

A LOT MORE LISTS DEVELOPED / COMING UP!!

California
Prop 65

REACH
Annex XVII

CLP CMR

Washington
CSPA CHCC





How Has Hasbro Reacted?

Hasbro Policy

SRP-017: bans/restrictions on many chemicals

SRP-025: supplier certification in addition to SRP-017

QA049: Hazardous chemicals control system

IT Tools

**Implement CMD and SciVera
for chemical management**



BOM/BOS Requirement

Require BOM/BOS of products from 2012 (SRP-023)



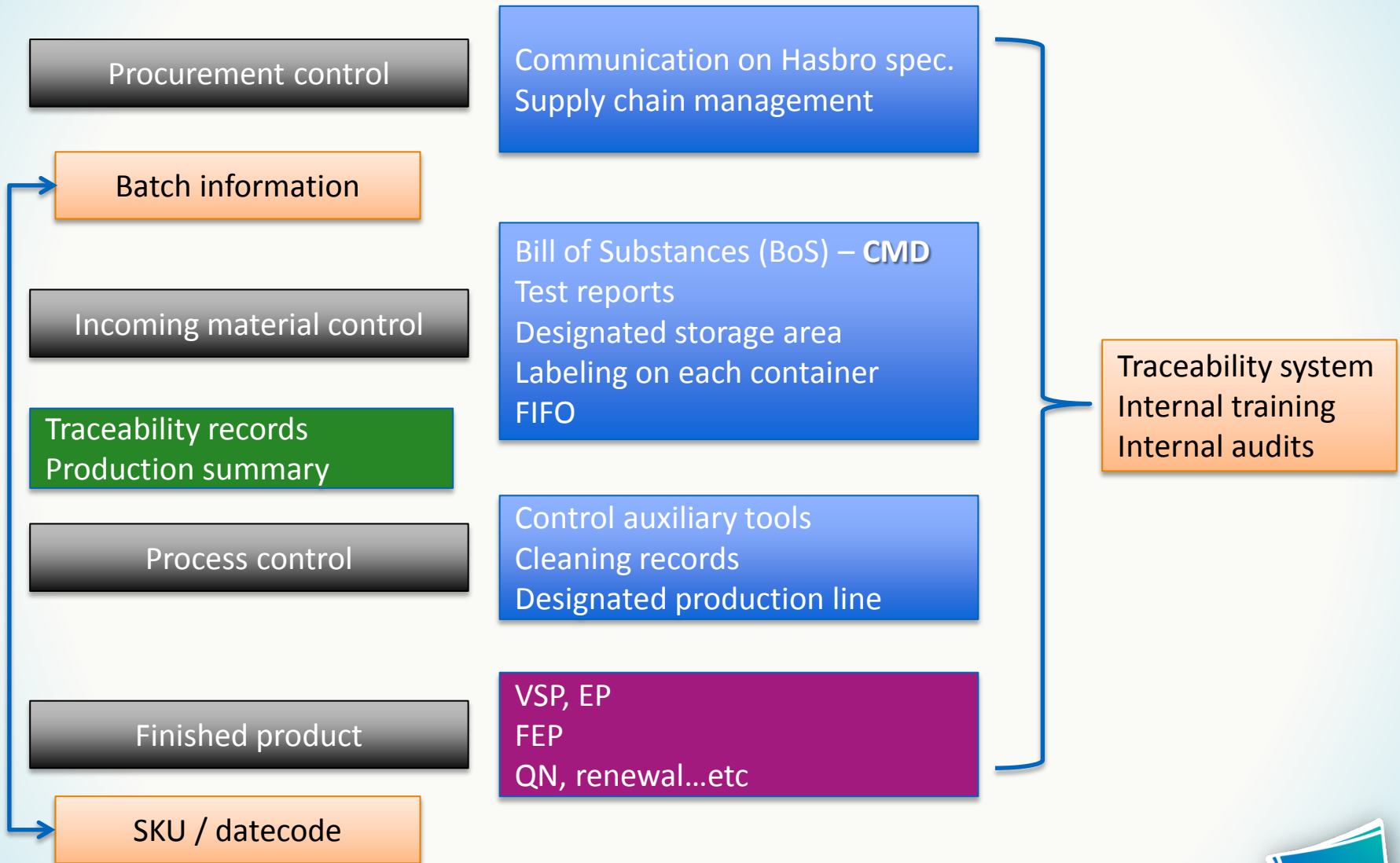
Conformity assessment procedures

- Module A: Internal production control
 - **Factory Audits and Vendor Quality systems**
 - Safety assessment (encompassed within extensive Hasbro procedures)
 - **Chemical safety assessment**
 - QN process
- Voluntary standards
 - Compliance with voluntary standards encompassed within extensive Hasbro procedures

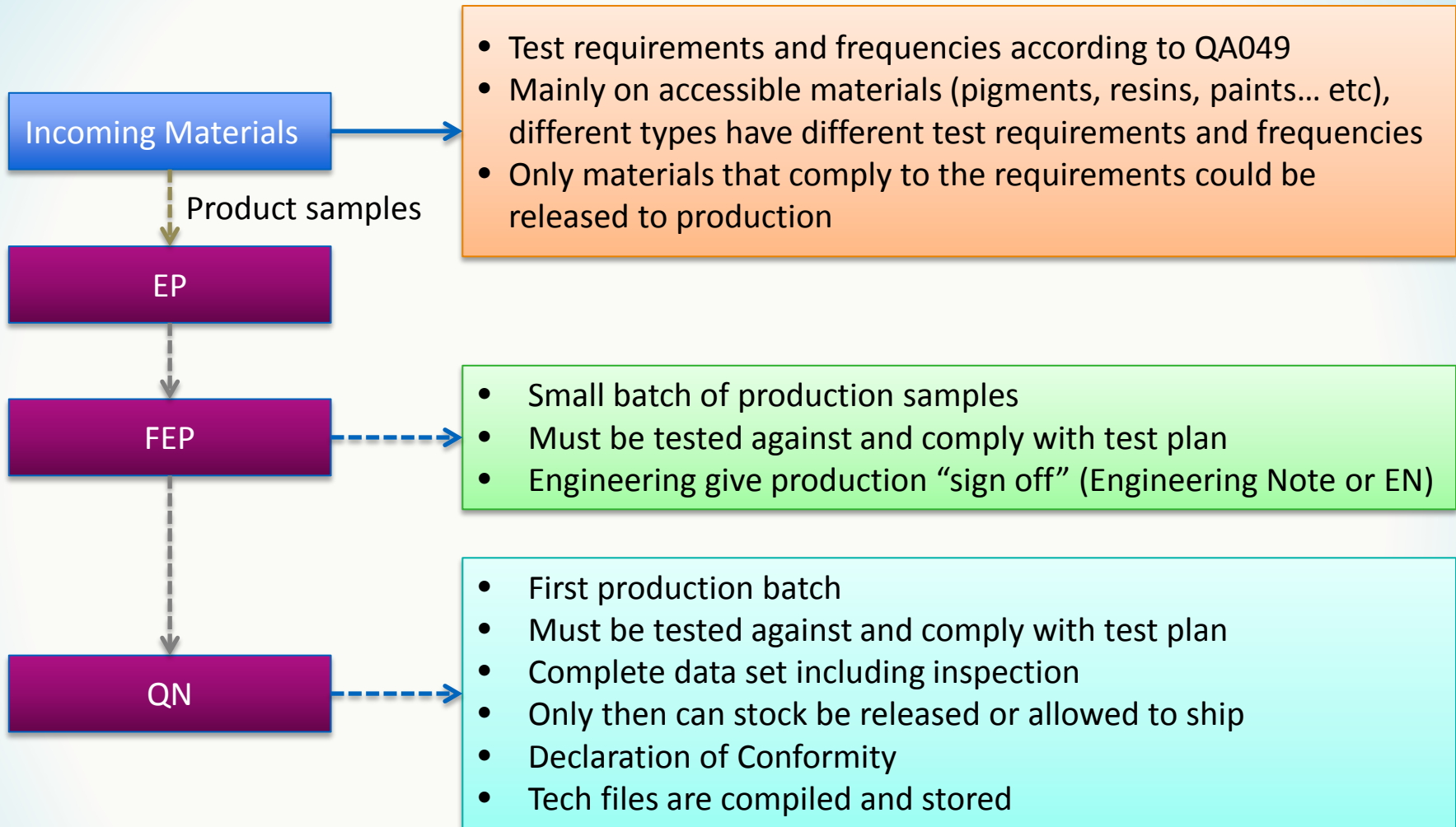
Third party testing to Harmonised standards may be used as a verification method.



Simplified flowchart on QA049 – HCC requirements



Key development stages



Post development controls

- Inspection controls
 - Each batch of production
- Vendors perform testing
 - Qualified vendors perform internal testing in their own facilities
- Supply chain management
 - Audit of suppliers
 - BoM / BoS
 - Vendor substance management (CMD)
 - Random testing
 - Commodity supplier approval
- QN process restarts in case of significant change or period without production (6 months).



Test specifications

- Test plan
 - Based around Hasbro's Safety and Reliability Specifications (SRS)
 - Key document in product approval and safety assessment
 - Includes :
 - Functional performance criteria
 - Life specifications
 - Reliability specifications
 - Torque/Tension specifications
 - Other “specialist requirements” (Electrical, Sound levels)
 - Revised at key stages of product development



Safety and Reliability Specifications (SRS)

- Around 120 individual specifications
 - Covers hazards from small parts, hemispheric shapes, heavy metals, nitrosamines in rubber...
 - Reliability measures include transportation tests and accelerated use tests
 - Combination of ASTM F963, ISO8124 and EN71
 - Includes requirements learned from product experience
 - Most stringent approach including margin of error where appropriate



Other procedures

- Product Development Requirements (PDR)
 - Around 50 individual procedures including Small part prevention, battery qualification, age grading....
- Safety and Reliability Procedures (SRP)
 - Around 20 individual procedures including Recall, consumer complaints, social compliance...
- Factories have QM systems
 - Must pass Hasbro Quality audit (based on ISO9001)



Hasbro Test capability

- Hasbro internal test lab, She Kou
 - 30 staff/785Sq.m
 - Qualified chemists
 - Heavy element testing
 - Phthalate content testing
 - Full physical lab incl. flammability
 - Microwave digestion
 - ICP-OES
 - LC-ICP Mass spectroscopy
 - GC Mass spectroscopy
 - UV-vis
 - XRF scanning
- Operation to ISO17025



Bill of Substance (BoS)

Incoming Materials

- Obtain complete BoS for accessible materials in toys
- BoS is not required for:
 - Non-retainable packaging materials
 - Inaccessible materials

Example of BoS

Trade name	Supplier	CAS no.	Chemical name	% Conc.	Function
Solvent A	AAA	78-93-3	Butan-2-one	40 – 60	Solvent
Super Black	BBB	1333-86-4	Carbon Black	1 – 2	Pigment
PolyX	CCC	25034-86-0	2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene	20 – 30	Resin in paint
BYXX	DDD	64742-48-9	Naphtha (petroleum), hydrotreated heavy	10 – 20	Flowing agent

- Maybe disclosed in the form of SDS, MBOS, declarations... etc.
- All BoS information should be compiled into BoM (Bill of Materials) and input into CMD

Two options of CMD:

- Full installation in factory's server (more expensive, suggested for factories with larger no. of SKUs)
- One time BoSConnect input service (much less expensive, web-based, suggested for factories with small no. of SKUs)

Hasbro CMD to SciVera LENS
for Chemical Safety
Assessment (CSA)



Why The BoS Way?

Testing not viable

▶ Millions of \$\$\$\$.
Test methods not even available/possible.

Questionnaires and declarations

▶ Need verification & frequent updates.

Fast changing regulatory environment

▶ Need to re-assess entire supply chain with upcoming requirements.
▶ Need for data to prepare periodic regulatory reports.

What's a Bill of Substance (BoS)?

Detailed description of a material including:

Chemical Name

Chemical Abstract Number (CAS No.)

Percentage



- Example: TK Leoman Printing Ink - BoS

Chemicals	CAS #	%
C.I. Pigment Yellow 174	78952-72-4	5-10
C.I. Pigment Yellow 12	6358-85-6	5-10
Rosin, polymer with p-tert-butylphenol, formaldehyde and pentaerythritol	68213-62-7	20-30
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	25-35
Linseed oil	8001-26-1	15-25
Poly(ethene)	9002-88-4	< 10
Octanoic acid, cobalt salt	6700-85-2	< 1



BoS v.s. Material Safety Data Sheet/Safety Data Sheet (MSDS/SDS)?

- MSDS/SDS usually only include information on the potential hazards (health, fire, reactivity and environmental) and how to store & work safely with the chemical substance.
- Example – TK Leoman Printing Ink - MSDS

Hazardous Ingredients

INGREDIENT	CAS NO.	Weight%	ACGIH (TLV-TWA*2)
Carbon black*1	1333-86-4	10~20	3.5mg/m ³
Octanoic acid, cobalt salt	6700-85-2	<1	—

*1 : Carbon black is contained only in BLACK ink.

*2 : Threshold Limit Value - Time Weighted over 8 hours

Does not usually contain all the information necessary to identify & evaluate chemical composition!



Validating CAS Number

A CAS Registry Number® includes up to 10 digits which are separated into 3 groups by hyphens. The first part of the number, starting from the left, has 2 to 7 digits; the second part has 2 digits. The final part consists of a single check digit.

First part: 2 to 7 digits

XXXXXXXX-XX-X

Second part: 2 digits, substance types

- Organic compounds
- Inorganic compounds
- Metals
- Alloys
- Minerals
- Coordination compounds
- Organometallics
- Elements
- Isotopes
- Nuclear particles
- Proteins and nucleic acids
- Polymers
- Nonstructurable materials (UVCBs)

Check digit

<http://www.cas.org/content/chemical-substances/checkdig>

EXAMPLE

CAS No. 7440-19-3

$$6 \times 7 + 5 \times 4 + 4 \times 4 + 3 \times 0 + 2 \times 1 + 1 \times 9 = 89$$

Check digit: $89 / 10 = 80 + 9 / 10$, check digit = **9**

CAS No. 7440-19-3 is **invalid** as its check-digit "3" is incorrect.

Validating CAS Number

In addition to organic and inorganic substances, REGISTRY has:

65,812,577 sequences

CAS RN 1632279-96-9 is the most recent CAS Registry Number

Specialized Substance Collections Count

[CASREACT](#)⁽¹⁾ 75,709,800 Single and multi-step reactions, and synthetic preparations

[CHEMLIST](#) 312,229 Inventoried/regulated substances

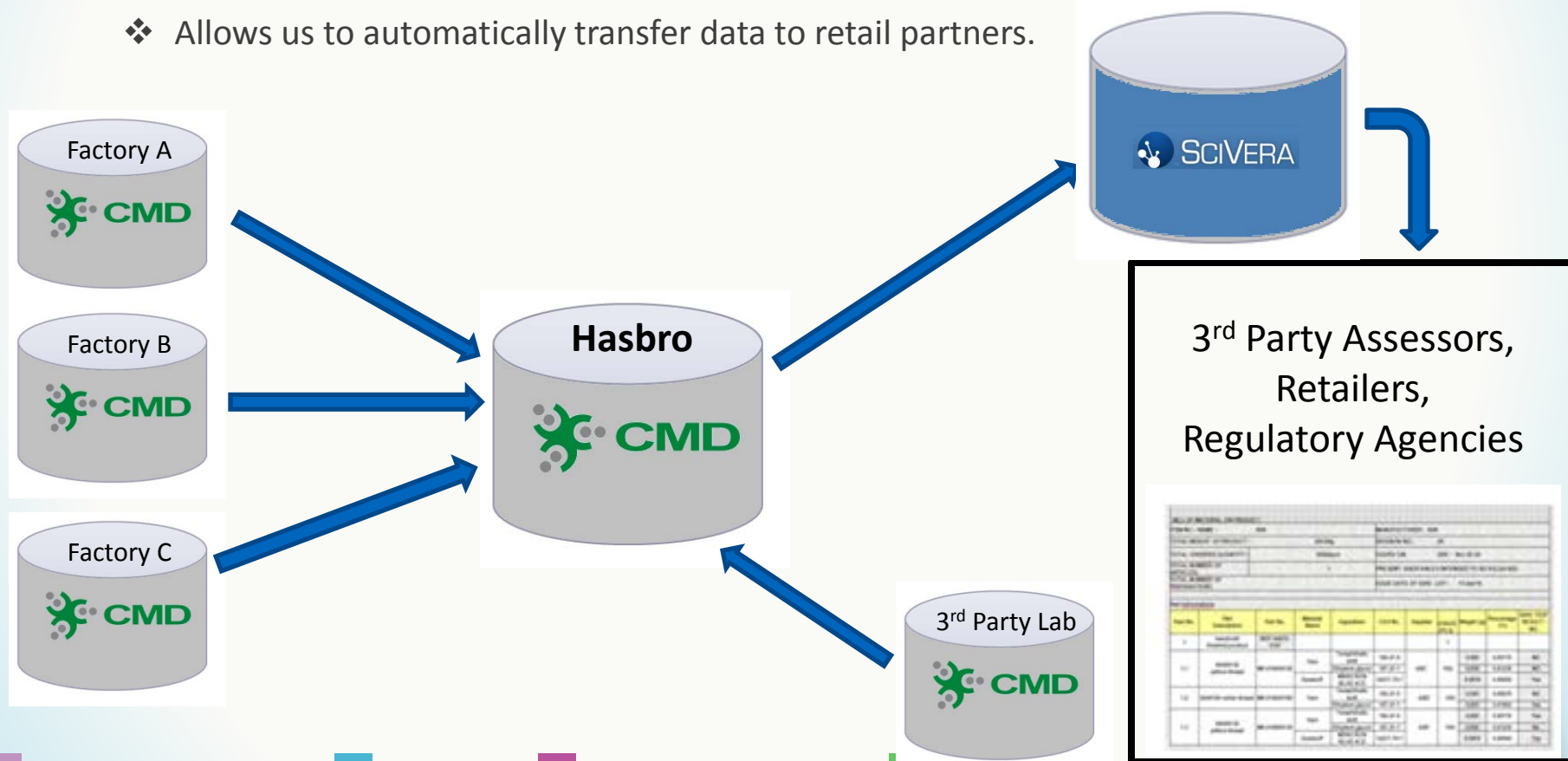
[CHEMCATS](#) 74,326,293 Commercially available chemicals

[MARPAT](#) 1,057,421 Searchable Markush structures

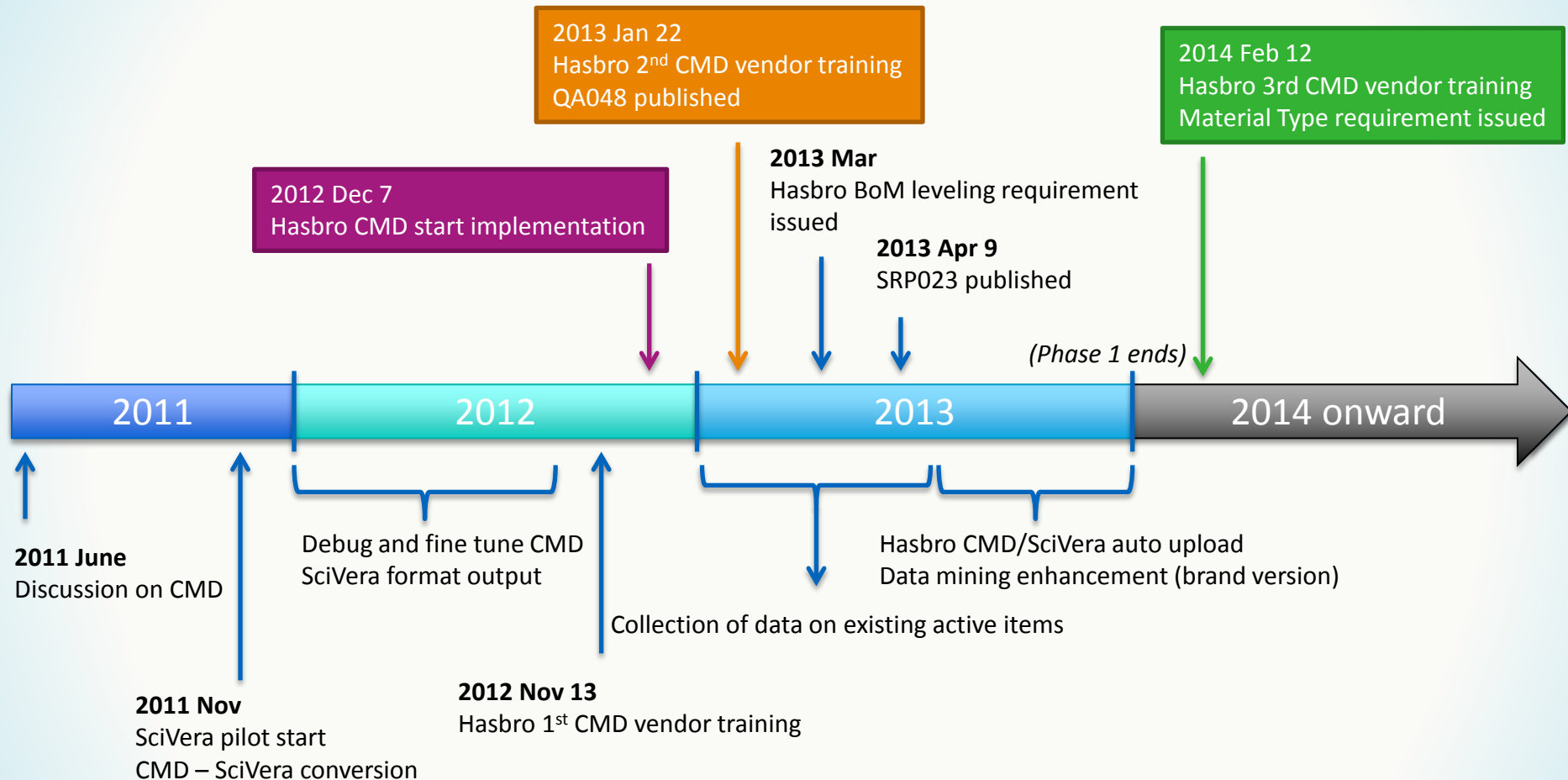
Hasbro CMD Workflow

Chemical Information Management

- Developed by Hong Kong Toys Council, software company and Toy Brands
 - ❖ Minimizes redundancy of multiple data entry at various location, real time status checking, data mining, compliance validation, auto filing capability, email alert engine
 - ❖ Allows us to automatically transfer data to retail partners.



Timeline on Hasbro CMD Implementation



In Summary

- Most stringent approach in the world
- Designed and manufactured to requirements in advance of current safety standards
- Audited, verified and inspected
- Becoming more stringent and transparent



Thank You!

? Questions ?



Thank you for your attention!

Open Questions?



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A Support Programme for Assisting Hong Kong SMEs To Effectively Achieve Hazardous Substances Compliance through Adoption of IECQ QC 080000 Hazardous Substances Process Management System

Funded by



Organized by



Implemented by



News of unsafe products are everywhere!



Back-to-school study finds high levels of phthalate chemicals in kids backpacks, supplies



The Telegraph



Toxic Waste in Hong Kong

雖然大部分可循環再造廢品可以輸港，但部分「電子垃圾」如廢舊電視等入境時須申請許可證，管制甚嚴格，惟不法回收商為選取當中的金、銀等貴金屬牟取暴利，會虛報廢膠入境，回收場拆解這些廢舊電器「淘金」時，因分解工序簡單落後，有毒物質會污染農作物和水源，例如水銀可損害肝和神經系統，對健康的影響不容小覷。

星島日報 – 2014年12月26日

全球毒垃圾塞爆香港

星島日報

星島日報 – 2014年12月26日星期五上午5:56

推介 18

Tweet 0

8+1 1

列印



星島日報 - 本港回收場工人每天揀選大量中外廢品變賣，餘下大量沒價值垃圾被送往堆填區棄置。

(綜合報導)(星島日報報道)本報發現大量「洋垃圾」近期因內地嚴打被勒令退運，部分中港商人乘機大量收購，連同俗稱「邊角料」的內地生產剩餘廢料，轉售予本港回收商，當中包括虛報為廢塑膠的「電子垃圾」，令中外廢品大量湧港。回收場挑選分類後，外來廢品搖身一變成為「本地垃圾」。業界估計每年至少逾二十七萬噸垃圾直送堆填區，等同每天要拋棄近四十個塞滿廢品的貨櫃，有業界擔心香港會引發環境大災難。

「香港回收「退港」(退運)廢品廢料、不良品、殘次品、廢舊電子產品，包銷毀服務。」近年本港不少回收商紛紛在內地報章或網站賣廣告，將收購爛銅廢膠的焦點放在內地，與過往外界認為香港只是「洋垃圾」進入中國的轉口港角色，大變身回收中外垃圾

Product recalls may lead to financial loss

Year	Company Involved	Cause	Financial Loss (USD)
2001	Sony	Excessively high Cadmium (Cd) in PlayStation Consoles during Christmas	\$150 million in lost sales and product reformulation
2006	Mattel	Lead (Pb) in paint in Barbie dolls	\$110 million recall cost including communication campaigns; and stock price down 18%
2007	RC2 Corporation	Lead (Pb) paint discovered on its Thomas % Friends toy trains	\$47.6 million legal fees; and stock price down 50%
2007	Palm	Treo 650 failing to meet RoHS	Stock price down 14%
2010	McDonald's	Cadmium (Cd) in Paint in Shrek-themed Happy Meal glasses (13.4 million)	\$3 refund for each glasses, around 40 million in US and Canada

Source: UNEP Report

<http://www.unep.org/chemicalsandwaste/UNEPsWork/ChemicalsinProductsproject/tabid/56141/Default.aspx#sthash.cz1RYgat.dpuf>

Solutions – old vs new



Traditional Solution

- Conduct Separate Tests for Individual Buyers and Compliance
- Extra Compliance Cost due to Extra Testing

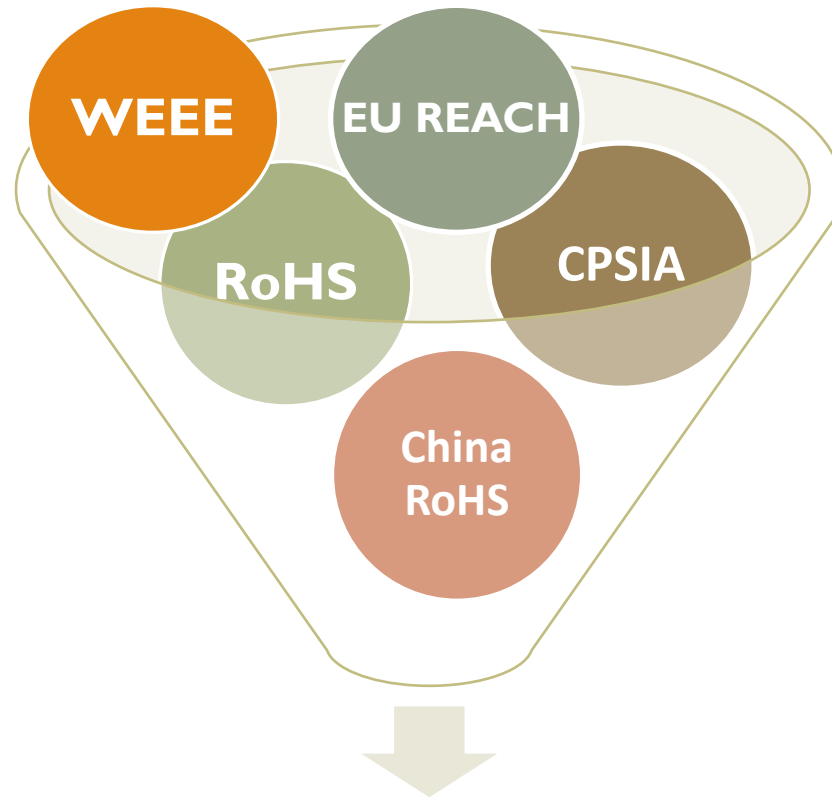


Systematic Solution

- Integration with ISO 9001 Standard
- One System to Fulfill Requirements of Multiples Buyers



Stringent Regulations may bring extra cost and legal consequence to SMEs



SMEs need a Solution

Solution - IECQ HSPM QC080000 System

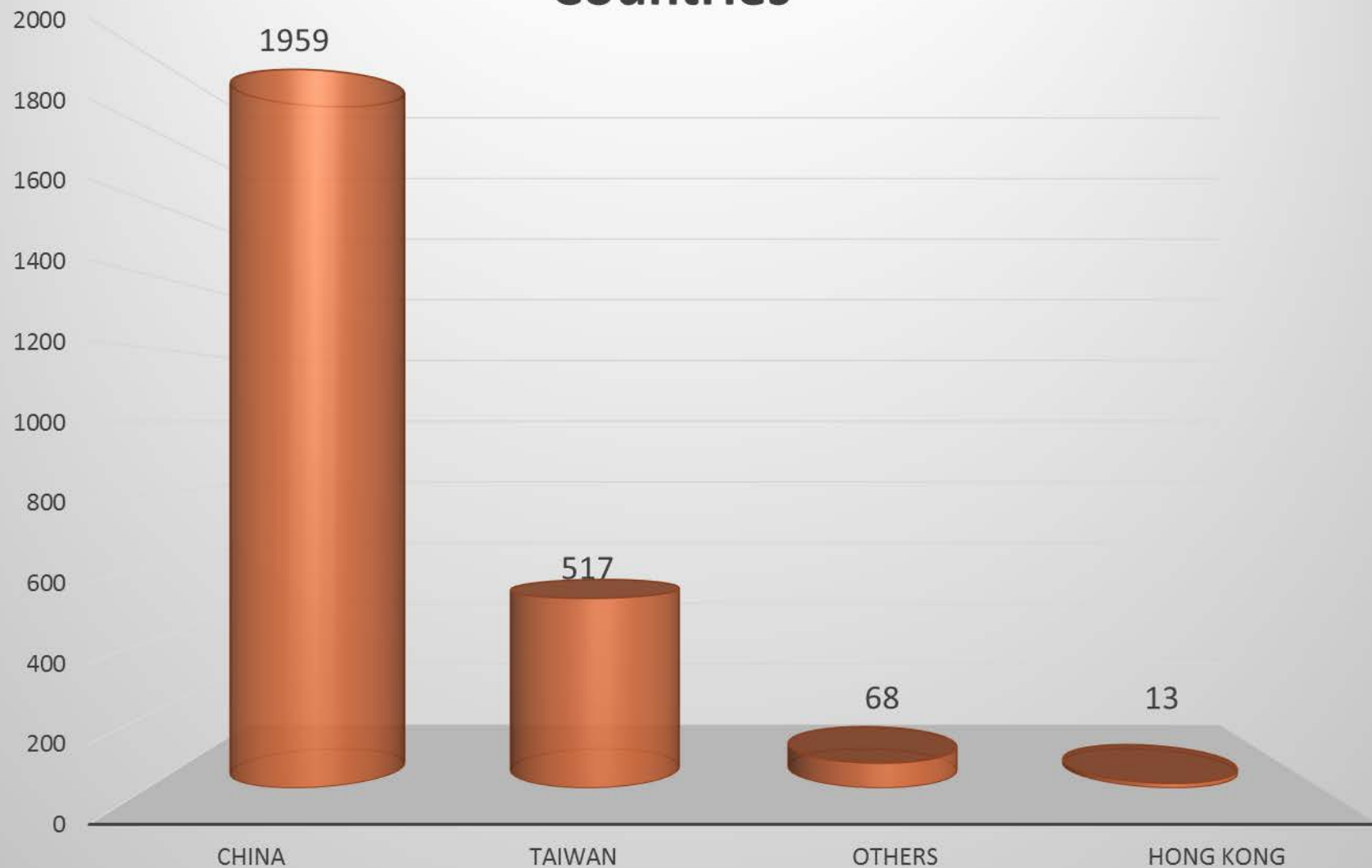
- Established by International Electrotechnical Commission Quality Assessment System For Electronic Components

(IECQ)



- Helps manufacturers implement a Hazardous Substance Process Management (HSPM) system in a **systematic** manner
- Certification tells global marketplace that processes are in place to **properly manage** products for achieving HSF
- **Reduce the risk** of non-compliance

No. of IECQ HSPM Companies in Different Countries



Benefits of Implementing IECQ QC080000

Case Study : A HK Electronic & Electrical Product Manufacturer

Situation

- Exports ~ 80 product models to Europe every year
- Product testing required for each model, **each \$10,000 to \$15,000**

Solution

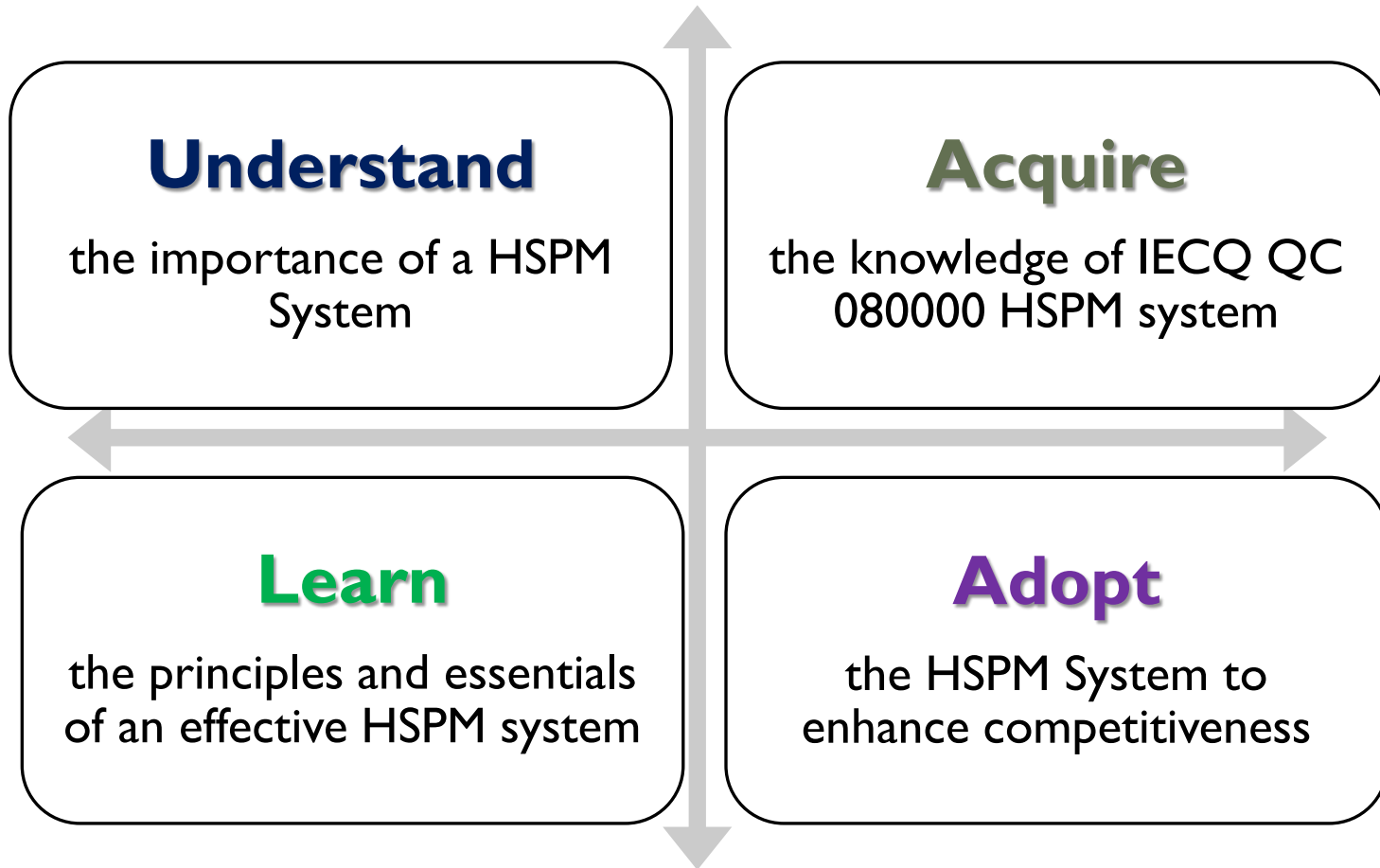
- Certified with IECQ QC 080000
- Certification Cost was ~HK\$ 25,000
- Surveillance Auditing Cost was ~HK\$ 10,000

Benefits

- Buyers started **exempting product testing**
- **Substantial cost saving** – HK\$ 500,000 per year
- Recognition of product quality

How do we Assist SMEs?

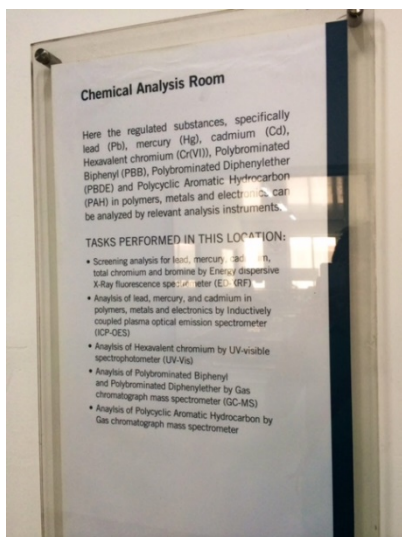
A 18-month Support Programme, aiming to help SMEs to:



Achievements of the Programme

Industry Consultation Visits

Interviews and On-site Visits to 10 Pioneer Companies



Awareness Raising Seminar

More than 140 participants from 60 companies



Achievements of the Programme

IECQ QC 080000 and Product Recall Workshop

More than 50 participants



Compliance News Update in GMN website



Disseminated to industries bi-weekly

有害物質管理最新資訊 - 歐盟將 DIBP 列入 RoHS 候選限制物質

主要機件產品
製造業

內容

產品中有毒物質的法規要求漸趨嚴格，近年針對各類產品安全的新法規亦不斷更新。德國機構 Oeko-Test e.V. 近期發佈了一份關於將 DIBP 作為 RoHS 新增受限候選物質的提案。另外，根據 RoHS 2.0 Article 6(1) 的規定，歐盟會定期對受限制物質清單進行審核，最近一次審核已於 2014 年 7 月 22 日完成。

目標值 (DIBP)	
物質名稱	鄰苯二酚二異丁基酚
EC 號	201-255-2
CAS 號	84-63-5

Upcoming Initiative I – Online Practical Guide



Production of an online step-by-step guide for effective IECQ QC 080000 implementation

Beneficiaries:

-**SMEs** which wish to develop their own hazardous management systems to meet regulations and buyers' requirements

Upcoming Initiative 2 – Product Recall Workshop



Workshop in May 2015 to address compliance strategies to address product recalls

Beneficiaries:

-**Key personnel** responsible for hazardous substance management for their companies, factory managers, compliance managers, etc.

Upcoming Initiative 3 – Industry Outreach



Visits to 10 industry associations to promote IECQ QC 080000 HSPM and explain the practical guide

Beneficiaries:

-**Industry associations** for electronics and electrical product manufacturers and associated SMEs in the supply chains, including buyers, wholesalers, suppliers and distributors

Contact Us

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Website:

Hong Kong Green Manufacturing Alliance
<http://www.gma.org.hk/>



Green Manufacturing Network
<http://www.gmn.hkpc.org/>



綠色製造網絡
Green Manufacturing Network