



# Developing Partnerships Delivering Peace of Mind

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2018  
SUSTAINABILITY  
REPORT



A photograph of a modern, dark-colored building facade. The building features large, multi-paned windows with black frames. A prominent sign is mounted on the upper part of the facade, consisting of a red 'pch' logo followed by the words 'innovation hub' in white, lowercase letters. A black metal railing runs along the top edge of the building. The sky is a clear, light blue. In the bottom left corner, there is a small red structure, possibly a fire escape or scaffolding.

pch innovation hub

# Welcome

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PCH is guided by our values of teamwork, integrity and passion as well as the principles of transparency and accountability.

Operating sustainably is key to providing our customers peace of mind and has been part of our culture since our company inception. We are best in class and share our best practices with the industry, supplier partners, customers and sustainability experts. We are open about our yearly improvement goals and areas where we want to make progress. We believe that being transparent builds trust and that adhering to stringent, high standards of operation make us a better company.

To develop and deliver the best products in a sustainable way, we maintain strong and mutually beneficial relationships with our customers and suppliers whom we seek to influence positively. We also continually educate our own people about the importance of sustainability because our success depends on embedding sustainable practices into every step of the product journey, while demonstrating its benefits to our stakeholders.

We outline for our customers and suppliers sustainable alternatives and methodologies. With global brands, sustainability is important to their business success and consumer affinity. Our customers look to us to help them improve their sustainability practices based on our experience. We partner with our customers at key junctures in the product journey – from the initial concept to development, manufacturing, supply chain management and reverse logistics. At the concept phase, we educate our customers about how to reduce harmful

and wasteful elements in their product journey. When approached early, sustainable materials, packaging, adhesives, chemicals, manufacturing partners and supply chain design choices can be made without adversely impacting industrial design, speed-to-market, the customer experience and total cost of materials. Most importantly, we help our customers by providing visibility across their global supply chain, which helps them reduce the risk of wasteful overproduction, while maximizing revenue opportunities.

With our Highway1 companies, who are part of our hardware accelerator located in Shenzhen, we made the decision to implement new guidelines to accept only companies willing to make sustainability integral to their business. This is our effort to put a focus on sustainability and to help companies who wish to make this part of their brand offering.

This report discusses our sustainability activities in 2018. In addition to educating our stakeholders about our best practices, this report helps us measure against our sustainability goals and anticipate challenges to our business.

PCH is a privately held company with headquarters in Cork, Ireland, and Innovation Hubs in San Francisco and Shenzhen, China.



*Bill Hanafin, Jaco Franken, Allan J Russell and Raymond Tan*

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# Our Purpose

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*Andrew Windler, Jon-William Murphy, Courtney Cavanaugh and Jeff Mayo*

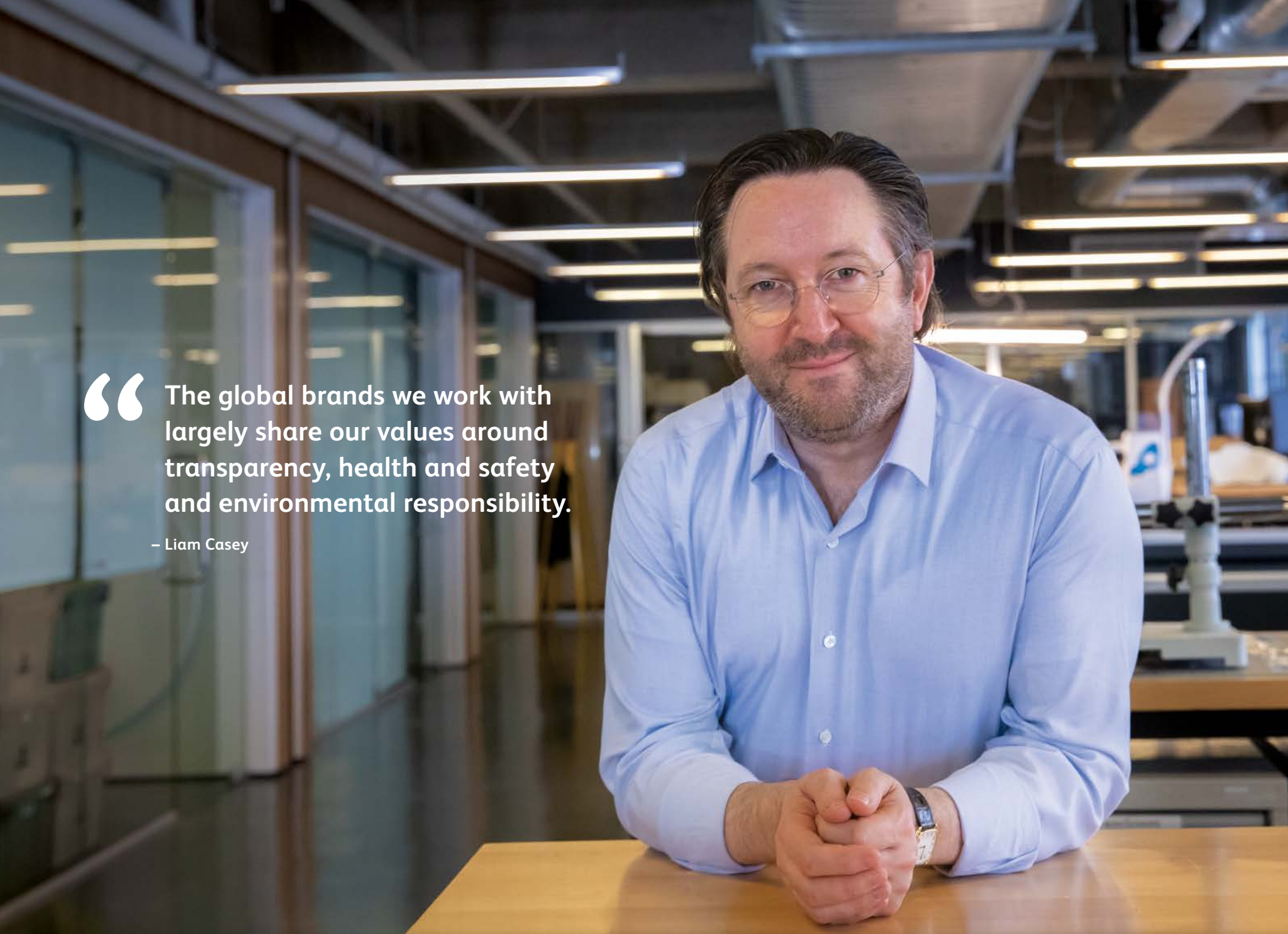


**Message from  
Liam Casey**

**Sustainability and  
Making a Positive  
Impact in the World**

**Sustainability Focus  
at PCH**

**PCH in 2018**



“ The global brands we work with largely share our values around transparency, health and safety and environmental responsibility.

– Liam Casey



# Message from Liam Casey

Chief Executive Officer

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PCH focuses on maintaining or exceeding the highest standards in sustainability. Operating sustainably is not only the right thing to do, it's also good for business. We are fortunate that the global brands we work with largely share our values around transparency, health and safety and environmental responsibility.

We are honored to be recognized as a leader in our industry. We are deeply committed to sustainability at all levels of our organization, which spans product development (including material selection, packaging and sourcing and auditing suppliers), supply chain services (including reducing wasteful over-production) and logistics. Over the past year we have continued to reduce our environmental footprint, while protecting the health and safety of our direct employees and those who work for our supplier partners.

In 2018, we saw a variety of changes in our organization as a result of continued consolidation of our facilities, refinement in our operations and teams and new customers each with a different project mix. From 2017 to 2018 we decreased the total number of employees (from 516 to 428) and total number of engineers (from 125 to 82). Our employee teams, locations, configuration and size continues to evolve to reflect the nature of our customer projects. New projects can vary in location, volume, complexity and type of work performed. For example, some projects are more engineering focused, while others require our manufacturing management expertise, intelligent supply chain services, postponement and fulfillment and after-sales services. Our workforce numbers and teams will continue to change as we bring on new customers and see new market opportunities with different work requirements.

While the size of our employee base was smaller in 2018 versus 2017, we increased the total number of units shipped. Our volumes change based on the types of products we ship. For example, some years we ship higher volume units that are lower cost items. Other years, we may ship higher

cost items with a lower volume of shipments. This project mix is also visible in the decreased number of total suppliers we used in 2018 versus 2017. We also saw a concentration in the percentage of markets we serve. This is reflective of the number of component parts in the products we made and the location of the consumers to which we delivered. It is key that we remain agile to respond quickly and efficiently to our customers and market opportunities.

PCH reduced the total square footage of our operations to achieve efficiencies. For this reason, we achieved water and energy savings as well as savings in business resources.

In 2018, our Highway1 program continued to be reimagined. We plan to give priority in the future to startups that embrace sustainability as part of their core brand, operations and business model. Although our large and established brand customers embrace sustainability, our role is to suggest and encourage the best sustainability solutions. We see an opportunity within our Highway1 program to help them fully embrace sustainability as a key component of their market differentiation and to build consumer loyalty through this differentiation. We expect to have an update on this program and its focus in 2019.

As we expand into new geographic regions, we will manage risk carefully and add to our processes to ensure that sustainability remains at the core of our operations. We will continue to invest in sustainability to remain leaders, see step-change improvements and deliver meaningful new impact.

We are honored to share our best practices with our community and to learn from our partners.

**Liam**



XiaoZhong Chen, Carols Li, LynnZeng and GuiDong Wu

## 2018 Trends Across Our Business

### Industry Trends

- > Fast-paced new product introductions (shorter time from product concept to consumer delivery)
- > Growth in IoT devices by sectors in 'non-tech' industries such as beauty, software and fashion
- > Increased demand for high mix/low volume manufacturing solutions
- > Increased demand for supply chain predictability, agility, velocity and sustainability
- > Consumer awareness of sustainability as a key element in brand loyalty
- > Complex IoT devices requiring integrated, end-to-end new product solutions
- > Demand for customization and personalization of off-the-shelf products
- > Mix of go-to-market channel solutions requiring agile supply chain solutions
- > Dilution of consumer brand power as a result of powerful e-commerce platforms
- > Commoditization of manufacturing services
- > Venture capital investment in "last-mile" delivery solutions
- > Growth of hardware development opportunities in the UK and European Union
- > UK political uncertainty and supply chain disruption caused by Brexit
- > Investment in technology to keep up with rapid technology disruption
- > Supply chain complexity and disruption caused by China/US trade uncertainty
- > US shift towards isolationism
- > Opportunity for increased product innovation spend as a result of US corporate tax rate (21 percent flat tax rate and lowered tax on repatriated foreign earnings)

# Sustainability and Making a Positive Impact in the World

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We aspire to be a strong and positive force in how products (e.g., consumer packaged goods and consumer electronics) are produced today while minimizing wasteful practices that result in excess production. We recognize the enormous environmental and societal pressures facing us all today. As leaders, we seek to exceed industry standards when it comes to corporate social responsibility, health and safety, supplier qualification and audits and protecting the environment. We set yearly economic, environmental and social impact improvement goals and share our progress openly.

We concentrate many of our sustainability programs in China, where we have the greatest number of employees and our environmental footprint is the greatest. We focus our programs on our employees who work directly for PCH and those who work for our supplier partners.

**We are responsible for helping our customers make new products in the most environmentally and socially responsible manner.**

## Our Responsibility

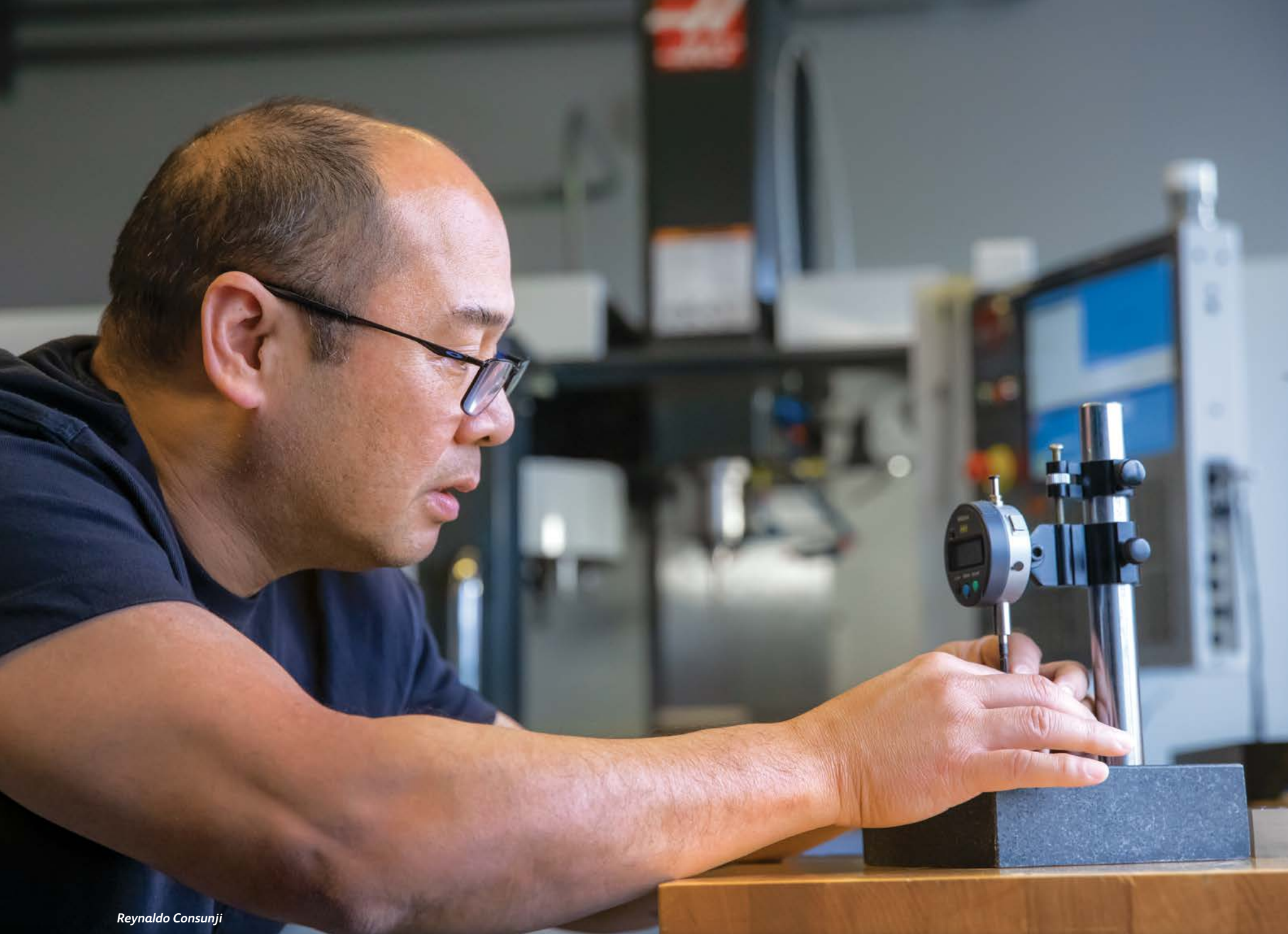
### Where we and our suppliers have the greatest footprint

We are responsible for helping our customers and suppliers make new products in the most environmentally and socially responsible manner. There are a variety of decisions our clients make that we influence by discussing sustainability early in the product development process when it is most cost effective to make changes. These decisions can involve: material selection, eco-friendly packaging, chemical management and replacement of harmful chemicals, LEAN manufacturing and inventory management (to reduce overproduction and waste) and product life cycle management.

## Our Focus

We integrate sustainability into our business operations because it is the right way to do business, and it results in both positive short- and long-term performance. We focus on three main operational categories:

1. **People**
2. **Supplier Partners**
3. **Products**



Reynaldo Consunji

# Sustainability Focus at PCH

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## People

Our highest priority is looking after those who work for PCH, both directly and indirectly. Our people are key to our success.

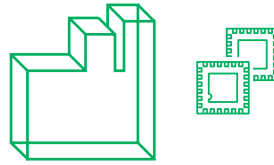
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### FOCUS AREAS

Employee development and engagement

Diversity

Health and safety



## Supply Network

Our purpose is developing partnerships to deliver peace of mind; collaborating with our supply network partners is key to delivering on this promise.

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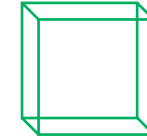
### FOCUS AREAS

Chemical and safety management

Energy management

Supplier qualification and development

Waste minimization



## Products

We take products from concept to consumer, balancing cost, quality and sustainability at every step.

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### FOCUS AREAS

Chemicals

Materials

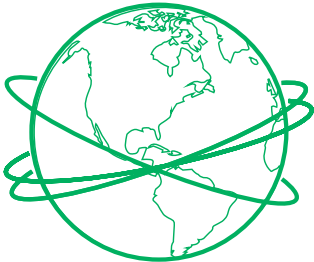
Manufacturing processes

Sustainable product and packaging design

End of life

# PCH in 2018

GLOBAL WORKFORCE (at Dec. 31, 2018)



428

SIZE OF OPERATIONS



332,304 sq ft

PERCENTAGE OF WORKFORCE IN CHINA

82%



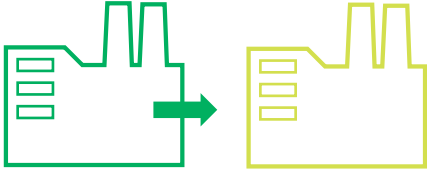
ENGINEERS GLOBALLY

82



SUPPLIERS TRANSACTED WITH GLOBALLY

151



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SUPPLIERS IN OUR NETWORK



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UNITS SHIPPED

5.41M

Our shipments  
are up 267%  
over last year



*Louise Huang and Mike Li*

# About PCH

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*LuTong Yang and Francois Papendorf*





PCH is at the forefront of new product introductions for the next generation of consumers. We continually stay ahead of global manufacturing, technology and business trends. We provide speed-to-market, eco-friendly solutions, unique customer experiences and supply chain services. We help our partners deliver brand intimacy, which is key to brand affinity.

Our customers value our open, collaborative and can-do culture. We seek to understand thoroughly our customers' business goals and requirements, and to align ourselves with them to maximize results. Our customers come to us seeking to bring innovative products to market (products that have never been realized before), because we are uniquely experienced in developing specialized solutions. Additionally, many of our customers are new to hardware (beauty, software, health and wellness, home, etc.) and trust PCH to bring their products to market efficiently, sustainably and with exceptional supply chain velocity and end-to-end intelligence and visibility.

**Our Company Goals**

**What We Do**

**2018 Company Update**

**The PCH Platform**

**Meeting the Demands of Global Markets**

**PCH Flo 360**

**Our Customer Base**

**Where We Ship**

# Our Company Goals

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1. Be a world-class leader in product development, new product introduction, post-production and supply chain orchestration for the world's best brands and startups
2. Align with our customers' goals and requirements, and provide superior service and deliver 'peace of mind'
3. Stay results-focused while retaining our can-do, high-integrity and collaborative culture
4. Remain a special, progressive and rewarding place to work
5. Increase diversity within our employee base
6. Operate profitably and sustainably

# What We Do

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For more than two decades, PCH has worked with the world's best brands and innovative startups to create and deliver breakthrough consumer products. Our expertise spans the entire product journey from product concept to the out-of-the-box consumer experience. We power an end-to-end, intelligent product development and supply chain service that enable our customers to bring new products to market quickly, efficiently and with supply chain velocity, sustainability and consumer engagement.

“ To be effective, we integrate sustainability practices at all levels of our organization and make it part of our DNA.”

– Alan Cuddihy, vice president, sustainability



# 2018 Company Update

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In 2018, PCH continued to expand our customer portfolio, adding additional brands to our client roster. Our customers are some of the best-known and fastest-growing brands in the world. They choose PCH because of our rigorous and efficient product development services, and our intelligent, end-to-end supply chain service that manage products from manufacturing to consumer delivery. Our customers value PCH's 23 years of experience and expertise, as well as our customer-focused, collaborative, high-integrity culture that aligns our objectives with their business needs.

We are pleased with our unique “asset-light” business model, which continues to differentiate PCH in our industry. We have invested in elements of the product life cycle – pre- and post-production – that drive value back to our brand partners. For example, instead of owning vast amounts of manufacturing supply (factories around the world), PCH has a trusted network of over 1,000 suppliers that we engage, oversee and manage based on customer needs and demands.

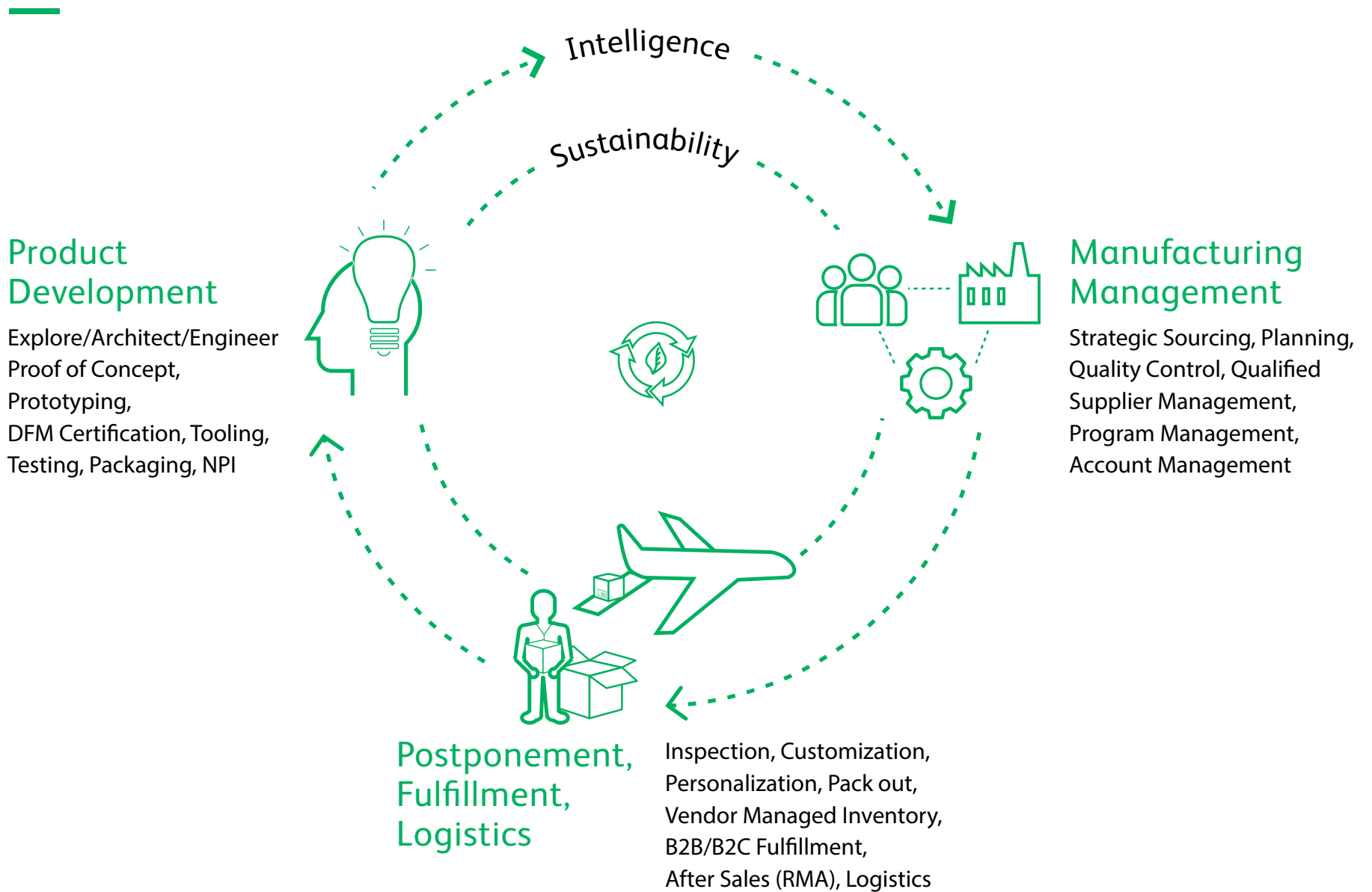
PCH invests in our highly differentiated pre-production services (product development, packaging design, material selection and strategic sourcing, production planning and production validation) and post-production services (manufacturing management, supply chain services, final assembly, personalization, pack out, postponement, fulfillment and delivery B2B and B2C). In the pre-production phase, we help companies develop products rapidly and sustainably to meet their customer needs. We ensure the products are engineered for manufacturing, identifying the most sustainable materials and methods so that the production cycle is efficient, of high-quality

and sustainable. In manufacturing, post-production and assembly, we help our customers manage their supply chain to reduce waste while delivering a great customer experience. We provide our brand partners real-time visibility and insight into their supply chain – how much they have on hand, and where it is at any given time, as well as a variety of other metrics key to optimizing their business.

These critical phases – pre- and post-production – can often pose the most risk to brands and startups in the form of missed deliveries, product recalls and over-production. These problems adversely impact financials and lead to waste.

PCH has stayed ahead of technology, manufacturing and retail trends by working closely with innovative startups, global brand leaders and world-class industrial design studios. Our customers are passionate about their design, their brand and the consumer experience. As more consumer brands operate direct-to-consumer channels, they increasingly see PCH as the best partner – most aligned with their business objectives. We help them navigate the many complexities of bringing products to market sustainably, transparently and with high customer engagement. Today's consumers require brands to be responsive and engaged. This requires an agile, responsive, transparent and sustainable supply chain. PCH supports brands that are creating limited edition and one-of-a-kind products at scale, and we deliver finished products world-wide direct to consumers from our facilities in Shenzhen. In many cases, we deliver within two days of receiving an order. PCH is well positioned for the future both in our supply chain architecture and our emphasis on sustainability.

# The PCH Platform





*Greg Verissimo, Jason Willis, Jonathan Downing and Benjamin White*

## The PCH Platform: Intelligent, End-to-End Product Development and Supply Chain Services Platform

Our product development and supply chain services platform is unique in the industry, delivering products seamlessly from concept to consumer for companies that are passionate about design, brand and the consumer experience. PCH creates premium products on demand – both at scale and in small batches – and provides a fully transparent supply chain platform that reduces unnecessary inventory. We enable real-time data and tracking, which allows our customers to optimize their business and reduce the capital risks associated with hardware.

PCH is distinguished in the marketplace by fully embracing sustainability. We have candid conversations with our customers and suppliers, and the options we bring forward are appreciated and generally implemented by our customers. We partner with tried and trusted suppliers to achieve the best results and provide our customers with ‘peace of mind.’

Because we work with our customers and industrial design studios at the earliest stage of product development (concept phase), PCH can help identify sustainable solutions early. The optimal time to bring suggestions forward is at the beginning of product development when we can optimize the supply chain with the least impact to the industrial design intent, speed-to-market and overall cost structure.

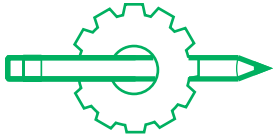
Our engineers design for manufacturing (DFM) and select vetted suppliers for component parts as well as final assembly production. We look for the best, most sustainable solutions at every phase of the product journey.

## Delivering Tangible Benefits to Our Customers

There has never been a better time for PCH’s intelligent end-to-end product development and supply chain services platform. Rather than focus vertically on one element of the product journey, PCH has optimized our services horizontally – end-to-end – from rapid product development, to strategic sourcing and managing manufacturing suppliers, to fulfilling product orders based on demand. We eliminate silos that are inefficient. Our model provides tangible benefits, allowing customers to: 1) get products to market faster, more efficiently and cost effectively; 2) increase their supply chain velocity, agility and efficiency; 3) manage their brand narrative with key offerings such as direct-to-consumer and personalized products; 4) have greater visibility and predictability when it comes to their supply chain operations; and 5) operate more sustainably.



Brian Younkin



## Phase I: Product Development

In the **product development** phase, we define, explore, architect, integrate, prototype and source the product, getting it manufacturing ready. We identify and estimate the cost of materials to bring the product in line with our customers' business model.

We follow a rigorous product development process that increases speed-to-market and reduces risk. Our team includes 82 engineers spanning a wide range of disciplines, including mechanical, system architecture (electrical, firmware and software), manufacturing integration and packaging engineers. We also have system integrators and program managers on staff, among other experts in bringing products to market.

At the **define** stage we review with our client the project objectives, value proposition and use case, and we create a development strategy, resource plan and statement of work (SOW). We identify high-risk product features and hard constraints that could impact industrial design, functionality, speed-to-market and cost.

At the **explore** phase we examine the competitive landscape and market-leading products to identify the most efficient approach to development. We evaluate alternative solutions with our clients and present our recommended development approach. We explore high-risk product features and develop prototypes to demonstrate the product performance and associated cost drivers. At this time, we assess the minimal mechanical envelope rationale, create mock-ups and deliver the initial Product Requirement Definition (PRD). This exploration results in a clear understanding of what it takes to develop a fully integrated product that

meets our customers' design, cost and user experience criteria. We also discuss sustainability opportunities such as material selection and efficient eco-friendly packaging. Changes can be made most cost-effectively at this stage of product development.

At the **architect** stage our goal is to conceive a completely feasible product solution with considerations for every feature and to optimize for eco-friendly solutions. We begin work streams to address high-risk elements and build numerous consecutive integrated **prototypes**, or "builds," to evaluate solutions in the lab. Our goal is to demonstrate that the design meets all the product performance specifications. We test and collect data to drive the best decision-making to move forward. We build fully featured and operable prototypes (that include electrical, mechanical and firmware solutions) and test these both in the lab and with users.

At this time we detail all components, sub-assemblies and assembly steps required for production. We deliver the preliminary estimate of an initial Bill of Materials (BOM) and the Cost of Goods Sold (COGS) assessment.

We **source** suitable suppliers, tooling requirements and configure the supply chain before moving to the manufacturing phase. The final assembly process is refined over successive builds (EVT-PVT) to optimize for cost, quality and yield in the final saleable product. Minor design adjustments are made as reliability testing and failure analyses reveal opportunities for improvement.

“ Having engineering and operational teams on the ground in China allows us to solve problems quickly and efficiently. We are representing our customers every step of the way, we understand where the risks are and how to mitigate them. This is not just from a sustainability perspective, but across the product development, manufacturing and logistics life cycle”

– Robert Andris, vice president, customer success and global supply chain solutions

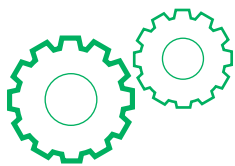


“ PCH reduces the risks associated with manufacturing and excess inventory. Our development rigor, experienced strategic sourcing and hands-on management ensures an efficient transition from development to manufacturing. At the same time, our real-time proprietary software dashboard enables our customers to optimize their business every step of the way.”

– Sean O Herlihy, director program management







## Phase II: Manufacturing Management

PCH refines the manufacturing process to optimize for cost improvements, quality requirements, reliability, volume and scalability. We confirm capacity, cycle time and line yield, and conduct necessary certifications (e.g., FCC and CE). We make final adjustments and implement necessary quality control checkpoints.

As we manage all stages from development to manufacturing, we follow a process that includes **Engineering Validation and Testing (EVT)**, **Design Validation and Testing (DVT)** and **Production Validation and Testing (PVT)**. Each phase addresses manageable steps to ensure a smooth transfer from engineering to manufacturing, and that the product is delivered as design engineered.

EVT is the first pilot run, or the production design performed in a prototype assembly by the operators, engineers and technicians assigned to the project.

During the DVT phase, the production line design is close to final production. We test and finalize fixture and assembly procedures. The working instructions and quality control plans are finalized.

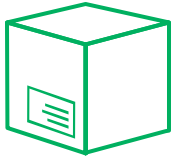
In PVT, we establish review processes for factories, suppliers and distribution. We integrate packaging and labels and manage and optimize the supply chain. In addition, PCH secures all regulatory certifications.

Our capabilities include: supplier technical analysis, regulatory and compliance management, design for manufacturing (DFM), tooling, industrial engineering, strategic sourcing, procurement, capacity management, material utilization, supply chain management, quality control, planning, continuous improvement and end-of-life planning.

Capital investment is required at the manufacturing stage to pay for custom tooling, procure components and develop the manufacturing assembly line. PCH reduces the associated risks to our customers because of the rigor we provide at all stages of the product journey.



*PCH Innovation Hub, San Francisco*



## Phase III: Postponement, Fulfillment, Logistics

PCH operates its own postponement, fulfillment and logistics operation. We ship products for B2B and B2C and deliver worldwide to over 150 countries.

PCH offers postponement services that allow products to be modified just prior to shipment to the consumer. The product components are held at the PCH facilities and assembled, packed out, customized (for specific regions) and/or personalized with high-quality monogramming, etching and printing on demand. This enables our customers to design built-to-order experiences for their consumers. Additionally, customizing and personalizing only when an order is received reduces the risks associated with excess inventory. Postponement optimizes our customers' supply chain by keeping the product at PCH until demand results in a shipment being created, customized, personalized, packed out and shipped.

During pack out, individual items – which are separate or related products included in one order – are grouped and packaged into one unit for shipping. These units can be destined for an individual customer (B2C), or a retailer or geographic market (B2B). During B2C pack out, for example, a consumer may order a product and related accessories that will be sent together in one customized package. This package is assembled at the PCH facilities within the Futian Free Trade Zone. Items are also packed out for specific geographic markets, e.g.,

a hardware product destined for France will have appropriate branding, a unique power adapter and instructions in French. Our pack out system is capable of assembling orders on demand and customizing these orders for different geographies. Packing out only based on specific orders reduces the potential of inventory risk, waste and excess warehousing costs.

Fulfillment is the process of managing orders and the supply chain that supports them. Fulfillment occurs when we receive a specific order and pack out products for this shipment. Products and their accessories are kept at PCH's facilities until orders are received via our online order and tracking system. Once the order is received, PCH customizes the order (pack out) and ships direct from our facilities.

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**Today's consumers demand affordable and quick shipping. PCH is fully automated (providing real-time tracking and order taking) and offers efficient shipping and logistics. PCH has facilities in the Futian Free Trade Zone and experience and relationships with all major shipping companies. We integrate our software platform with all major carriers, providing real-time, timely tracking services. PCH is often relied upon to help our customers enter new markets fast to gain market share quickly, while reducing inventory risk.**



**PCH has provided post-production services for global brands and startups for over 20 years. Our partners depend on us to deliver premium products to consumers worldwide.”**

– Valerie Chen, vice president, packaging and logistics solutions



## Certifications and Regulations

PCH has a variety of international certifications, including:

- > **ISO9001** (international standard for quality management system)
- > **ISO13485** (medical device quality management system)
- > **C-TPAT** (trade security)
- > **ISO27000** (information security)
- > **ISO14001** (international standard for environmental management system)

## Dangerous Goods Regulations

At times, PCH is required to handle “dangerous goods” as determined by the International Air Transport Association (IATA). These include lithium ion or lithium polymer cells and batteries, for example. To ship such goods, consignors are required to prepare a form certifying that the cargo has been packed, labeled and declared according to the IATA.

PCH strictly adheres to these regulations, and we have robust guidelines in place to ensure appropriate handling of these items during production. We hold IATA Dangerous Goods Certification and have a dedicated, trained team responsible for handling dangerous goods.

PCH is also AEO (Authorized Economic Operator) certified and has been approved as compliant with WCO (World Customs Organization) or equivalent supply chain security standards.

# AliveCor KardiaMobile 6L

Heart disease is the leading cause of death in the United States, claiming more lives than all forms of cancer combined. AliveCor is a global leader in transforming cardiac care. The Company's medical grade electrocardiogram (EKG) products detect normal heart rhythm or atrial fibrillation (AFib) anywhere, anytime in just 30 seconds – all in a portable, affordable device.

With AliveCor devices, patients can analyze and manage heart conditions quickly, conveniently and cost-effectively. The KardiaMobile 6L, AliveCor's newest product, takes its advanced technology to the next level, providing the most detailed insights on a patient's heart ever seen in a mobile, pocketable device.

## The Challenge

As the first cost-effective, non-invasive, smartphone brand-agnostic solution that achieves 6-lead EKG recordings, the KardiaMobile 6L needed to instill patient confidence in the product's accuracy, reliability and effectiveness. The product design also had to be manufacturable at scale, using the highest quality materials and components, while meeting globally recognized (including FDA and FCC) standards. In addition, the product would need to meet cost targets and sustainability requirements.

AliveCor's product vision was brought to life by AliveCor's R&D team and PCH's world-class engineering and manufacturing expertise. PCH worked closely with AliveCor to realize KardiaMobile 6L's robust technical and user experience requirements.

## PCH Solution

Because PCH and AliveCor had worked together on two previous EKG devices, PCH had a good understanding of AliveCor's expectations and workstyle.

PCH worked to realize the product's functionality and enhance its reliability and manufacturability – all the while adhering to the industrial design intent.

In approaching the design of KardiaMobile 6L, AliveCor sought to create an inspired, new-to-the-world solution — a timeless new hardware product. AliveCor envisioned using high-quality materials coupled with innovative assembly methods to create a discreet, premium medical device. The design was conceptualized with the belief that simplification and purity in materials and assembly were key to providing users moments of joy in daily use.

At the early stages of the project, PCH and AliveCor consulted with PCH's manufacturing engineering team regarding sourcing, tooling and assembly requirements. PCH's guidance regarding the manufacturing feasibility and risks associated with each design option was crucial in choosing the design direction, enabling AliveCor to choose an optimal design while being certain that it could be engineered and manufactured at scale. Once the design options were narrowed, PCH began prototyping the device.

PCH engineers built, iterated on and tested the primary design concept at PCH's state-of-the-art prototyping labs in San Francisco. Functional builds were made to understand and test the primary industrial design concept, assembly process, total part count, features, functionality and reliability.

During the prototyping phase, PCH found that the industrial design, which called for a height of 7.0 millimeter (mm), would not fit the necessary components and battery. With very little internal body space,

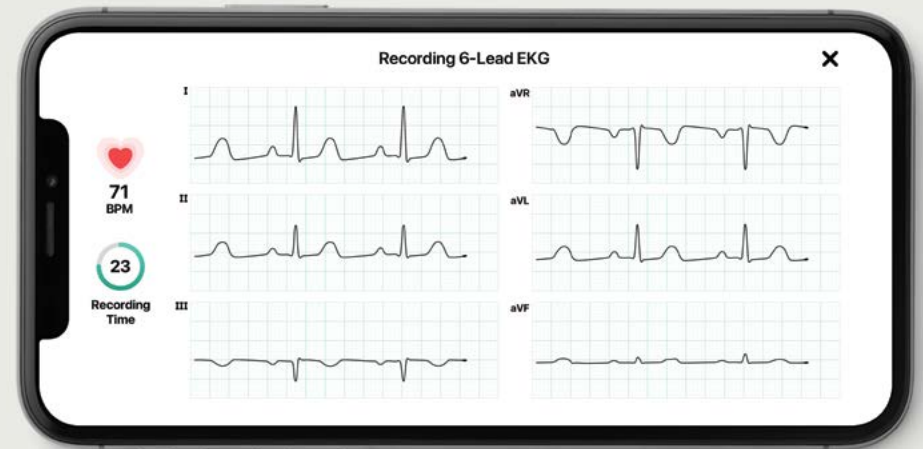
the device had to enclose a removable gasketed battery door. Ultimately, PCH found a solution that slightly enhanced the device height to 7.15mm.

It was also critical to streamline assembly for mass production while adhering to global guidelines (such as the FCC in the United States) for medical wireless products.

### The Result

Throughout the project, PCH brought its in-depth knowledge and deep experience in engineering, product development, manufacturing at scale and supply chain management to deliver a robust solution for AliveCor.

AliveCor recognized the value of establishing strong partnerships between design, engineering and manufacturing experts at the earliest product concept phase. This close working relationship proved essential in not only delivering AliveCor’s product vision and robust technical and user experience requirements, but also in creating a beautiful, high-quality product that meets global standards and cost target for a consumer product.



*Kardia 6L industrial design by level design SF*

“ We are thrilled to work with innovative companies such as AliveCor who are empowering patients around the world.”

– Hugo Ortiz, principal mechanical engineer and PCH Innovation Lab manager



# Meeting the Demands of Global Markets

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PCH has unparalleled skill in inventory management, utilizing real-time data to help our customers optimize their business. We have the ability to deliver a unique out-of-the-box customer experience that involves personalization and customization. When inventory is well-managed and tracked, the right product is in the right market at the right time to maximize sales, and reduce the risks of overproduction and waste.

PCH combines our automated real-time inventory management system with manufacturing management, postponement, pack out, fulfillment and logistics platform, to provide our customers the maximum flexibility when it comes to product orders that meet the demands of global markets. Based on real-time data, our customers oversee their on-hand inventory as well as inventory in their channel. This gives our customers control over the amount of product produced, when best to reorder and which markets to send product to fill demand.

PCH utilizes a pull system to manufacture products on demand, increasing efficiency and reducing waste by eliminating unnecessary production. We move products fast and efficiently at our Shenzhen operations located in the Futian Free Trade Zone, where we have six loading bays with daily outgoing international shipments.

When it comes to reducing cost and waste, other key considerations are industrial packaging (PCH has its own packaging engineering team), palletization, postponement, transportation dynamics and right-sizing. PCH manages these factors to optimize capital, reduce costs, lower waste and increase efficiency. All of this while protecting the product during transit and delivering a delightful customer experience.

Our postponement model allows our partners to design and produce a built-to-order personalized (laser etching, dye-sublimation and product/packaging UV printing) experience for customers around the world. Late stage customization optimizes efficiency throughout the production process, reduces supplier cost and inventory waste and removes complexity in forecasting and planning.

PCH's professional pack out services have contributed to the success of numerous Fortune 500 companies and innovative startups. We operate multiple production lines at our pack out facility to improve efficiency and account for fluctuating demand. Our flexible configuration supports high-volume efficiency and high-mix, low-volume orders. Customized, automated technologies such as auto-labeling machines, H-shape sealing machines and auto-scaling machines deliver additional efficiencies, while a comprehensive serial number control process simplifies inventory management.



Raymond Tan

We operate a rigorous five-stage quality control system during pack out, from vendor incoming batch orders to outgoing shipments, supported by our Shop Floor Control intelligent tracking system. This process includes:

1. **Incoming article inspection**
2. **In-process quality control**
3. **First article inspection**
4. **Final inspection**
5. **Out-of-the-box audits**

“ Real-time data and insight are critical to optimizing operations. We provide visibility to our customers across their supply chain. Our customers know that the more days of inventory in the channel, the more potential risk of overproduction and waste.”

– Liam Casey, CEO

## Unique Add-On Services Provided by PCH

- > **Packaging development:** PCH develops eco-friendly product packaging to ensure quality handling during shipment, maximum efficiency, lowest cost and the best out-of-the-box customer experience.
- > **Personalization services:**
  - > **Laser Etching:** Etching messages and images (which can be personalized to individual requests) on hardware or soft goods.
  - > **Dye-Sublimation:** Allows for high-quality image transfer using PCH's proprietary dye-sublimation process (with water-based inks) to ensure high-image fidelity and maximum product reliability.
  - > **Device/Package Printing:** Ultraviolet (UV) cured printing on devices or accessories for high-quality personalized image finishes with excellent reliability properties.
- > **Software Loading, Firmware Refreshing and Device Pairing:** Software/firmware device loading delivers improved supply chain efficiencies and limits Internet Protocol exposure.
- > **Hardware Function Testing:** Hardware tests allow for final product functionality assurances across a range of simulated use cases. PCH makes sure all final product specifications are met.
- > **Vendor-Managed Inventory (VMI) Service:** PCH ensures that our customers maintain inventory based on delivery to MPS (Mass Production Schedule), optimizing inventory and leading to easy access and fast turnaround on orders while reducing labor, emissions and transportation costs.

“ PCH optimizes our customers’ supply chain and helps them increase consumer engagement, while reducing emissions, energy, storage and transportation costs.”

– Robert Andris, vice president, customer success and global supply chain solutions



## Case Study

# Chaos Fashion Sustainability

Overproduction causes unnecessary waste product that overwhelms landfills and wastes precious natural resources. It also hurts the balance sheet of companies – especially adversely impacting startups who cannot afford unnecessary inventory, which stifles innovation. But solving this problem has been difficult for many companies because they often don't have a clear sense of their sales forecast. Direct-to-consumer online sales has helped put companies directly in touch with their customers (versus selling via retail outlets) and has enabled them to track sales, engage customers in loyalty programs and create products on demand. Key to this formula is the ability to deliver direct-to-consumer, create unique one-of-a-kind products at scale, and deliver in a timely fashion – all while guaranteeing a great, high-quality consumer experience.

This is where PCH has been able to help consumer product companies that have a direct-to-consumer online channel. PCH's unique design engineering, manufacturing and fulfillment model enables companies such as Chaos Fashion to produce unique products (luxury phone, tablet and travel accessories) on demand (personalized products) and to deliver them worldwide within 2-4 days.

By partnering with PCH, Chaos is able to focus on marketing, creative design and new products, while PCH manages all logistics and provides invaluable visibility into their supply chain operations, which helps them avoid overproduction. Via PCH's proprietary software, Chaos knows where their product is from the moment it is ordered (and made on demand at PCH) to the moment it is delivered to their customer.

Although we are fully aware of the environmental impact of air shipments of these products, we endeavor to negate this impact by reducing excess inventory leading to significant reduction in manufacturing and supply chain carbon emissions.



Huge proportions of returned products end up in landfill, and the reality is that the majority of plastics are not recyclable. This leads us to a position that limiting production to precisely meet demand is a critical problem to solve. PCH is using Life Cycle Analysis technologies to accurately calculate the environmental impact of products we develop, and drive decisions that minimize overall negative environmental impact.

Chaos has utilized PCH's end-to-end, intelligent supply chain orchestration platform since 2016. Chaos only makes products that are already sold to individual customers, reducing unnecessary waste and saving valuable resources. And because the products are personalized, they are less likely to be returned.

“ We invest in software and other key technology that give our customers visibility, predictability, control and flexibility over their supply chain. These tools are essential to managing day-to-day business operations.”

– Bill Hanafin, vice president,  
chief digital information officer



## PCH Flo 360

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Inventory management is key to running a healthy business. PCH offers a suite of software modules to our customers that provide anytime/anywhere real-time end-to-end visibility for every product that PCH touches. PCH has developed a proprietary software suite – PCH Flo 360 – to help our customers better manage daily business with real-time data. Our customers have supply chain visibility, including real-time order and shipping status traceability. As soon as an order is placed, the details are printed on a packaging label, and the status of the package is logged electronically. In addition, PCH Flo 360 is integrated with major international carrier systems such as UPS, FedEx, DHL and USPS, which provides maximum insight and flexibility.

PCH Flo 360's second-by-second data includes information on delivery orders, purchase orders, inventory management, production schedules, finance, demand forecast, report generation and product catalogues. Our software developers work with customers to provide:

- > System integration with customer processes and partners
- > Development of application tools and dashboards
- > IT product line setup according to customer requirements
- > Online system support for daily production

# Our Customer Base

Our customers come from a variety of sectors including beauty, fashion, retail and consumer packaged goods, audio, consumer services, health and wellness, home and entertainment, financial technology and payments, and consumer electronics and peripherals.

Our customer base includes many of the best brands in the world. We work with both seasoned technology companies (hardware and software and service enterprise), as well as companies that are new to hardware and rely on us because of our vast experience bringing products, including IoT, to market. Our commitment to sustainability is a positive factor in selecting and trusting PCH.

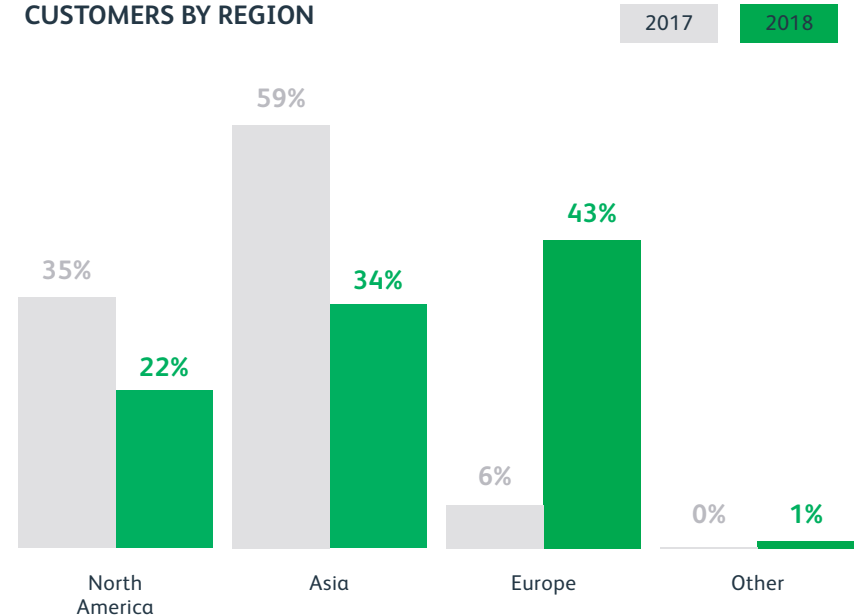
We seek to have long-term, trusted relationships with our customers. Sustainability is a key part of these relationships and the trust we engender. We share our commitment to protecting workers, minimizing harmful chemicals and materials, reducing energy consumption, reducing wasteful packaging and auditing suppliers for compliance with internationally recognized sustainability standards. We uphold the highest sustainability standards in all of our operations.

## Customer Satisfaction

Keeping our customers satisfied is central to our success, and we continually strive to provide the best customer service in our industry. We discuss satisfaction levels with our customers and suppliers on a project basis regularly, and we conduct broader surveys to determine the overall satisfaction level of our customers, including how we can improve our services.

# Where We Ship (2018)

CUSTOMERS BY REGION



% CUSTOMERS WHO UTILIZED AIR FREIGHT



UNITS SHIPPED



# Operations



Tan Zhen



PCH is a global company with key innovation hubs in San Francisco and Shenzhen, China; software development in Cape Town, South Africa; HR, finance and IT in Cork, Ireland and international business development teams.

## Our Key Operations

PCH Operations in Shenzhen, China

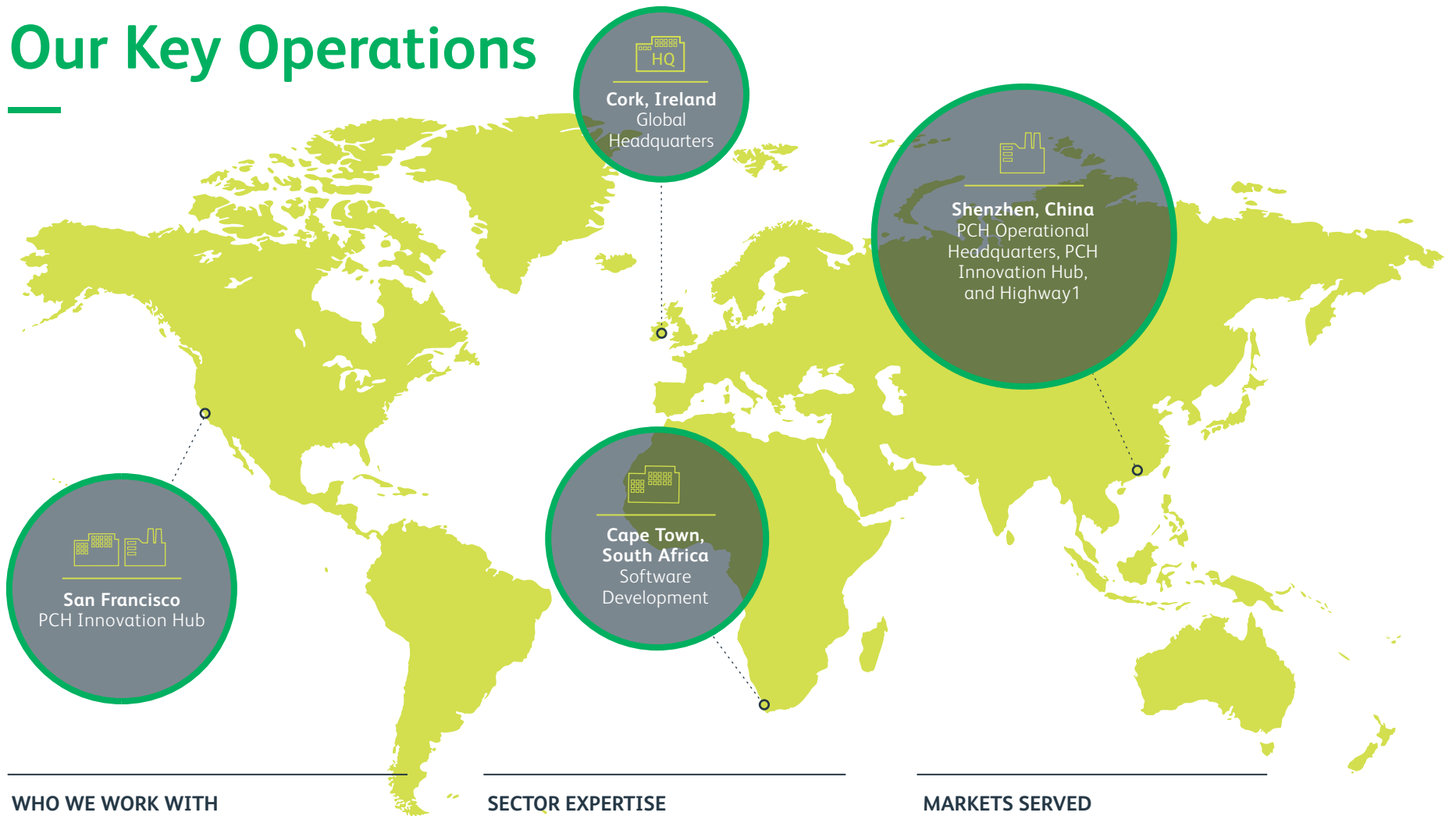
PCH Operations in San Francisco

## Sustainability Initiatives

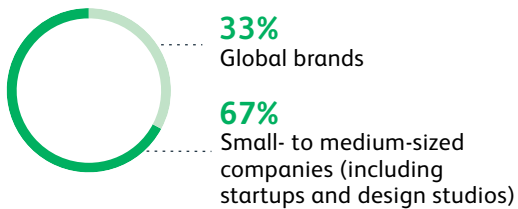
Our Environmental Impact

Resource Use

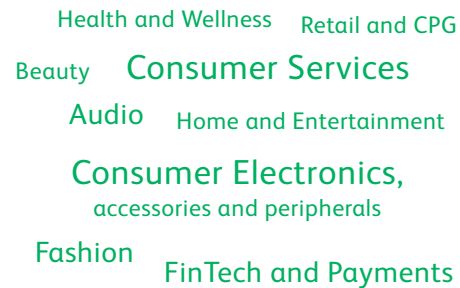
# Our Key Operations



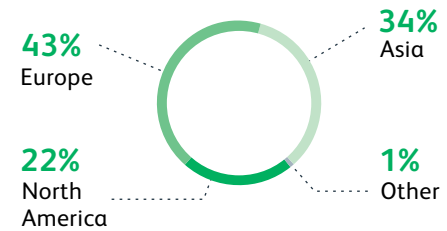
## WHO WE WORK WITH



## SECTOR EXPERTISE



## MARKETS SERVED (BY SHIPMENTS DELIVERED)



# PCH Operations in Shenzhen, China

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PCH has been operating in China since 1996, where we provide engineering and development (DFM), manufacturing management and post-production services for product categories, including: FDA-approved medical devices, IoT hardware, consumer electronics, soft goods, beauty products, accessories and other goods.

The PCH Innovation Hub is located in the Futian Free Trade Zone, which allows our customers to benefit from favorable labor rates, without paying export duty on finished goods bound for global markets.

PCH packs out hundreds of thousands of units per day and ships B2B (parcel and bulk shipments) and B2C direct from China. Our direct to retail and consumer shipping as well as real-time tracking increases inventory efficiency and reduces waste. We run two employee shifts daily, six days a week, and expand production depending on demand. We have internal planners who schedule production according to our clients' shipment requests. At the same time, we adhere to local laws and regulations when it comes to protecting workers.

In addition, PCH has corporate offices and research and development operations in China, and we operate our Highway1 hardware accelerator in this facility.

# PCH Operations in San Francisco

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In 2012, PCH opened the PCH Innovation Hub in San Francisco to serve global clients, many of whom are located in Silicon Valley or come to the San Francisco Bay Area seeking innovative partners. With over 35,000 square feet of office and lab space, our Hub houses state-of-the-art prototyping labs, teams of engineers (mechanical, firmware, electrical and packaging), system integrators, program managers, business development and support operations.

## State-of-the-Art Prototyping Lab

Our prototyping labs (machine shop, electrical engineering, wet lab, soft goods, packaging, 3D rapid prototyping and testing) and expert lab personnel allow us to work efficiently and iteratively with our clients (and their industrial design teams) to accelerate time-to-market, enable efficiencies and mitigate technical risk. Once a project is kicked off, our team reviews the product objectives, timelines, constraints, business case, desired user experience, feature set and design intent. We explore feature set variations, research comparable products, source components, develop a preliminary cost of goods estimate and create a development recommendation. We integrate and refine the product by building working units (design validation units or DVUs), assembling subsystem models, conducting tests, developing schematic and layout designs and designing early packaging concepts. Our teams always design with manufacturing requirements in mind (DFM), and we work closely with our manufacturing team to develop initial tooling plans, to source components for pilot builds and to design the ideal supply chain.

# Sustainability Initiatives

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Most of our sustainability impact occurs in China, where our supplier partners have the greatest environmental footprint. Consolidating our facilities in Shenzhen into one campus allowed us to conserve resources and operate more efficiently. We also developed an online energy management dashboard to track energy use on a real-time basis.

## Conserving Water

As a result of consolidating our facilities in 2016, we continue to see reduction in water use. Water use at our China operations went from 8,903 tons in 2017 to 5,125 tons in 2018, a decrease of almost 43 percent.

We saw a decrease in greenhouse gas (GHG) emissions and electricity use in 2018.

Electricity decreased to 602,771 kWh in 2018, compared to 920,347 kWh in 2017.

Greenhouse gas (GHG) emissions decreased from 1,390 metric tons of CO<sub>2</sub> in 2017 to 862 metric tons of CO<sub>2</sub> in 2018.

## Small Energy-Saving Program that Saves Big

### Air conditioners

In 2018, in looking for all energy savings, we evaluated the four large air conditioner units in our Shenzhen offices for their efficiency. It was determined that one unit should be replaced for a higher efficiency unit, theorizing that we would see 30 percent in energy savings. In fact, we saw 47.11 percent year-over-year in energy savings compared to the same time period, July to November 2017, (excluding temperature factors) equating to a total of 24,818.8 kW-h in energy savings.

### Small-Power Air Conditioners

In areas where we have fewer than 10 people working at one time, it was determined that we could save energy by replacing large 44kW air conditioners with small, removable but just as effective 1.1kW air conditioners that use less power. These smaller units keep workers cool, and save energy. During times when more workers are present in this area, we can switch to the large backup unit for employee comfort. We anticipated saving 54,549 kW-h of energy but actually saved 25,971.1 kW-h year-over-year during the same period, July to December 2017.

### Afternoon Lights Out

During lunch time, when office workers are resting or taking their lunch, PCH turns off the 400 overhead lights in our main office in Shenzhen. In 2018, by turning off the lights when employees were not working, we were able to realize a total of 1,044 kW-h in energy savings.





PCH Innovation Hub, Shenzhen, China

“

We invest in technology that allows us to monitor our energy use on an hourly basis and optimize our operations. We are committed to reducing waste throughout our organization.”

– Erick Wu, senior industrial engineer



# Our Environmental Impact<sup>1</sup> 2018

## OUR FACILITIES

We have environmental data for  
**267,730 sq ft**  
of our reported operations  
(91.9% of the total)

## CHINA



### One building

The PCH Innovation Hub in China includes office space, manufacturing, pack out, fulfillment and distribution facilities, a loading dock, a product design engineering and development lab and an R&D center.

—  
**267,730 sq ft**

This facility has a low risk for occupational hazards and environmental pollution.

—  
Electricity is the only significant form of energy consumed in our facilities. It is used for air conditioning, lighting and operating machinery associated with pack out and fulfillment.

—  
Our facilities do not utilize heat or steam.

## U.S.



### One building

PCH Innovation Hub

—  
**28,500 sq ft**

Natural gas is used for heating and hot water.

—  
Electricity is used for all other needs, including to power our state-of-the-art prototyping and systems integration lab.

## OTHER

### Three buildings<sup>2</sup>

One office each in Cape Town, South Africa; Cork, Ireland; Hong Kong

—  
**26,074 sq ft**

—  
These offices are home to Fab.com, finance, sales, marketing, IT and global operations.

—  
These offices use electricity, domestic water and materials (environmental data not provided by landlord).

1. All information for our U.S. sites is obtained from third parties.

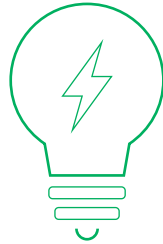
2. Environmental data is unavailable for our Cork, Hong Kong and Cape Town offices. We expect to include these locations in our measurements in 2019.

# Resource Use<sup>3</sup> 2018

## ELECTRICITY USE

**1,022,453 kWh** global total

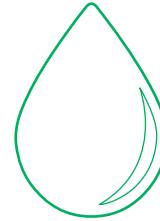
U.S. **419,682 kWh**      China **602,771 kWh**



## WATER USE

**5,645 tons** global total

U.S. **520 tons**      China **5,125 tons**



## GREENHOUSE GAS (GHG) EMISSIONS

**862 metric tons of CO<sub>2</sub>**

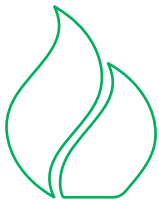
U.S. **309 metric tons CO<sub>2</sub>**

China **553 metric tons CO<sub>2</sub>**



## GAS USE

**3,718 therms** U.S.



## WASTE PRODUCED<sup>4</sup>

**237,765 lbs.** U.S. & China total



Landfill U.S. **24,184 lbs. (10%)**



Recycling U.S. **22,972 lbs. (9.9%)**

Recycling China **190,337 lbs. (80%)**

> Waste plastic China **66,768 lbs.** (from Jan. to Dec.)

> Waste paper/carton China **123,569 lbs.** (from June. to Dec. 2018)



Compost U.S. **0 lbs. (0%)**



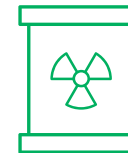
Recycled electronic waste U.S. **272 lbs. (.1%)**

## GLOBAL TOTAL HAZARDOUS WASTE

**182 lbs.** (0.7%)

U.S. **0 lbs. (0%)**

China **182 lbs. (100%)**



## HAZARDOUS WASTE PRODUCED IN CHINA

Waste water mixed with lubricant oil: **1 lb.**

Waste lubricant oil: **44 lbs.**

Light tubes: **8.75 lbs.**

Hazardous chemical container: **8.5 lbs.**

Used batteries: **8.75 lbs.**

Waste organic solvent: **66 lbs.**

Cloth mixed with solvent: **1 lb.**

Ribbons: **44 lb.**

3. U.S. data: All information was received from third parties. The water consumption information was received from the San Francisco Public Utilities Commission through the property management (CBRE) and Godtland Enterprises. The waste information was received from Recology (Waste Management Co.). The gas and electric usage was received from Pacific Gas & Electric accounts.

4. All waste is disposed of by licensed operators. Hazardous waste generated in our owned facilities is the only available waste data for our operations in China. All non-hazardous waste (scraps) generated in PCH facilities are owned by our customers and are disposed of according to our clients' wishes using licensed operators.

# People

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*Josa Leung and Jeff Huang*



The well-being and safety of the people who work for PCH directly and indirectly (through suppliers) is our greatest priority. Our Corporate Social Responsibility (CSR) program focuses on: health and safety training, mentorship, education, social and cultural activities and open communications. We support a variety of communication channels – town hall meetings, one-on-one meetings, a telephone hotline, Microsoft Sharepoint/Messaging and WeChat. We also have a management open-door policy, which encourages employees to speak with managers at any time they feel necessary. These vehicles and policy create a positive work environment by fostering open and trusted communications at all levels of the organization. We also encourage mutual respect, collaboration and teamwork, which are fundamental to our company values and result in positive, trusted relationships. Individuals and teams are empowered and encouraged to help improve workplace safety, among other areas of possible improvement. Most importantly, we promote an open culture where employees feel comfortable talking to each other, managers and senior leadership about opportunities for improvement as well as concerns they may have.

## About Our People

## Worker Health and Safety

## Career Enhancement Opportunities

## Developing and Engaging Our People

## Diversity

## Overtime

## Grievances

# About Our People

## TOTAL WORKFORCE



## WORKFORCE COMPOSITION

Region	Employees		Supervised workers <sup>5</sup>	Total workforce	% of total workforce
	Operators	Office staff			
U.S.	0	47	7	54	13%
China	141	205	4	350	82%
Ireland	0	10	5	15	3%
South Africa	0	7	0	7	2%
India	0	2	0	2	0%
<b>Total</b>	<b>141</b>	<b>271</b>	<b>16</b>	<b>428</b>	<b>100%</b>

5. Supervised workers are all non-employees: workers hired through dispatch agencies or contractors, consultants and interns.

## EMPLOYEE GENDER



# Worker Health and Safety

We continue to promote a safe work environment and safe work practices. In addition to providing ongoing safety training to our employees, PCH regularly reviews and monitors our health and safety management systems and policies to comply with, and in many cases exceed, industry requirements.

In China, PCH has a Social and Environmental Committee comprised of 53 employees. Management, engineers and line operators sit on this committee and are responsible for factory labor, environment, ethics and health and safety management.

At our factory facilities, we monitor potential hazards related to fire safety, chemical use, equipment safety and occupational health. We promote safety programs across our communication channels and supplier base.

Our employees enjoy regular breaks in their work schedule. They are encouraged to socialize and simply enjoy downtime with a book, boardgame, ping pong or other activities of their choosing. In China, PCH has a well-stocked library, relaxation areas and a fresh food cafeteria that serves lunch daily. Other PCH global locations feature daily snacks, game rooms and other on-campus relaxation areas.

## Training + Awareness = Results

Educating employees is the key to enhancing workplace health and safety, and worker satisfaction and retention. Training and open communication empower our workforce to continue to enhance their skills and grow professionally. Our employees know that their opinions and voice are important. When it comes to safety, training helps to encourage employees to report factory issues that might otherwise be overlooked. By training and educating employees, we drive high standards and help grow our organization in a responsible manner that adheres to our sustainability commitment.

PCH in China health and safety data	2016	2017	2018
Injuries	0	1	0
Fatalities /occupational diseases	0	0	0
Lost days	0	3	0



**Safety is our highest priority, and we are proud of our safety record. We continue to review and monitor our safety systems and policies to make sure they meet, or in many cases exceed, industry standards.”**

– Christie Ma, director of human resources



Chen XueLin



Lu GenHong and Xu ZhiHui

19%  
of our factory workforce  
participates in the Health  
and Safety Committee





Celine Zhai

# Career Enhancement Opportunities

## Mentorships and Classes Motivate Employees

All PCH employees receive on-the-job training and career enhancement opportunities.

We encourage our employees to grow through career development programs. In 2018, our staff participated in a variety of training and development sessions such as:

- > One hundred and eighty-five participants were provided 899 hours of training on customer service, office software, management skills, technical skills, labor law and Social and Environmental Responsibility. Forty-three new hires were provided new hire orientation.
- > Factory workers attended over 2,508 hours of training, including CSR/EHS/AEO/ISO as well as courses on health and safety.
- > Factory workforce engagement programs were offered via the Little Bird programs.
- > PCH project managers attended project management training.
- > PCH Supply Base Management Team attended supply chain management training.

# Developing and Engaging Our People

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## Little Bird Partnership

Little Bird is an independent, non-governmental organization established in 1999 to assist migrant workers in China by knowing their rights.

We value our long-term partnership with Little Bird and continue to see the organization as a valuable partner in developing our workforce culture and encouraging open communication.

Little Bird conducts onsite visits to the PCH library (where employees can read and check out books, play board games and relax) and learning lab every Friday, which is located near the cafeteria. During this time, Little Bird staff are available to meet face-to-face with workers.

In addition to meeting with workers, the organization runs a confidential and anonymous hotline where employees can discuss their concerns or requests candidly. Our employees are encouraged to use the hotline for any issues they feel need to be addressed. Little Bird also operates a popular PCH WeChat channel where employees can openly discuss what's on their mind. These channels are valuable tools for gathering insights about our workforce. In addition, we continue to partner with Little Bird to provide a variety of services to workers, including career counseling, opinion collection, dispute mediation, cultural development and occupational safety training.

In 2018, Little Bird initiated a promotion onsite at PCH to increase awareness of their services and the hotline. They distributed promotional items such as 200 key chains, 320 fans, 130 cultural shirts, over 240 Rubik's Cubes and badminton rackets, as well as over 1,200 daily necessity items such as toothbrushes and combs. Their objective was to engender a strong relationship with the organization, listen to and learn from employees, encourage outdoor social activities and promote the hotline and WeChat channels.

98 hotline calls

14,315 WeChat messages



Bin HongYun

“ Little Bird is a valuable partner in providing social and human rights services to our workers in China. Organizational representatives visit PCH each Friday, and they meet face-to-face with our workers to listen, discuss and advise on anything that may be on their minds. Little Bird also offers a variety of social services and team activities (both indoor and outdoor) that our employees enjoy.”

– Christie Ma, director of HR

# Diversity

Having a company culture that values diversity is particularly important at PCH because we have a diverse employee base, as well as a global customer base. We believe diversity is good for business and the right thing to do. We also place great emphasis on gender equality because women are often underrepresented in the hardware and technology sectors. In 2018, 33.3 percent of the PCH senior leadership team was female and we saw a small increase to 45.4 percent in senior management roles held by women, vs 44.8 percent in 2017.

**33.3%**  
of senior leadership team is female

**40%**  
of middle management is female

**45.4%**  
of senior management is female

Employee category by gender and age	M	F	<30	30-50	>50
Senior leadership	66.7%	33.3%	0.0%	66.7%	33.3%
Senior management	54.6%	45.4%	4.5%	86.4%	9.1%
Middle management	60.0%	40.0%	0.0%	93.3%	6.7%
Individual contributor	52.0%	48.0%	23.7%	70.3%	6.0%
Factory staff	29.5%	70.5%	23.0%	75.4%	1.6%

“Gender equality and employee diversity are essential to our company. We believe in an open and inclusive environment where individuals feel represented, respected and supported. We are proud of the progress we are making, especially in improving gender equality across the company and at the senior leadership level.”

– Liam Casey, CEO

# Overtime

A standard work schedule at PCH, including China, is 40 hours over five days per week. Our Supplier Code of Conduct (CoC) requires that factory workers work no more than 20 hours per week of overtime and no more than 36 hours per month, except in emergency or unusual situations.

The opportunity to work overtime is a priority for our workforce and if it is not available, many workers will seek alternative employment. All overtime is voluntary and workers are entitled to at least one day off per seven-day week.

Workweeks exceeding 60 hours are deemed excessive by industry associations and at PCH we share this view.

“ Our standard workweek is 40 hours. All overtime is strictly voluntary. We monitor overtime and adhere to industry standards.”

– Jason Yu, director of operations

Overtime	2014	2015	2016	2017	2018
Average workweek (hours)	51	52	44	49	49
Compliance with Code of Conduct <sup>6</sup>	99%	100%	91%	91%	99%
Breaches of 60-hour workweek (number of weeks)	8	0	17	4	3
Average rest days per month	5	6	5	5	5
Breaches of one rest day per week	6	0	3	1	0

“ We have a variety of communication channels available to employees to express their grievances confidentially, anonymously or openly. We take grievances seriously and address them quickly and fairly.”

– Christie Ma, head of HR in China



## Grievances

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We expect there will always be some grievances reported by employees, and we see this as healthy because employees feel comfortable reporting issues that are important to them. The most important solution to grievances is to have a process to address grievances quickly and fairly, and for all employees to know that their concerns are taken seriously. During 2018 at PCH in China, we saw a large increase in the number of grievances submitted.

Employees reported 94 grievances in 2018, compared to 39 in 2017. Most of the grievances – 79 percent – were complaints about the food service, which was disrupted while transitioning to a new food supplier. Other grievances addressed factory management (12 percent) and miscellaneous (nine percent). There were no grievances associated with pay/welfare. Miscellaneous grievances include employee relationships, training, leave and personal issues (related to employee families).

## Grievance Mechanisms

All of our grievance mechanisms comply with local laws and regulations and promote an atmosphere of open communication. At our corporate offices, human resources (HR) and management are trained to foster an open-door culture, where grievances can be expressed formally or informally. In our factories, we have a formal grievance program so that factory workers know their concerns will be resolved in a fair and timely manner.

Open communication among employees drives continuous improvement. The Little Bird partnership reinforces open dialogue between PCH management and our workforce.

We operate multiple grievance mechanisms and most are available to our workforce 24 hours a day, six days a week. For factory workers, we have four specific grievance systems.

### Human Resources or Factory Management Can Be Reached Via:

1. Direct contact with factory line leaders, supervisors or managers.
2. Suggestion box – Employees can express their concerns or suggest improvements anonymously through suggestion boxes. These boxes are checked every Monday and action is usually taken within 15 days of the concern/suggestion being submitted. This may take longer in certain situations, for example, where a worker survey is required to get wider employee feedback, or more time is needed to fully investigate the case.

3. Employee Forum – Held once per quarter, this gathering is attended by employee representatives, factory general managers, HR managers and the internal audit team. Human Resources will supervise the implementation of improvements from the forum. Responses and improvements are posted on a notice board within three months.
4. Little Bird – Little Bird sends employee concerns/suggestions to HR once a week. Most issues are resolved within one month, or if a more serious concern arises, it is addressed immediately.

Since our partnership with Little Bird in 2012, this platform has become increasingly popular among our staff to express concerns/suggestions in the workplace and it continues to be our most popular grievance mechanism among factory workers. Management strives to close all grievances within three months, and address and close serious grievances promptly.

**We operate multiple grievance mechanisms and most are available to our workforce 24 hours a day, six days a week.**

# Supply Network



*Xiao XueQin and Li MingZhu*





Partnerships are the cornerstone of PCH. We foster trusted and long-term partnerships with our customers and our supplier partners to align interests, maximize opportunities and solve problems together. When we work together, we get the best results, and we must do this in an atmosphere of mutual trust and benefit.

## Partnering with Our Suppliers

## Our Supplier Audits

## The PCH Supply Network

## Supplier Facilities Health and Safety

## Suppliers PCH Transacted With in 2018

# Partnering with Our Suppliers

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Strong and positive relationships with suppliers enable us to have greater influence across our supply network and to incorporate sustainable practices where we see opportunity. Our suppliers must sign our Supplier Code of Conduct (CoC) agreement and comply with all applicable local laws and regulations.

In 2018, PCH transacted with 151 suppliers globally. This does not include suppliers that worked with our San Francisco-based engineering team. The majority of our company spend is focused on customer-selected suppliers; however, most of our sustainability programs focus on PCH-selected suppliers because we believe this is where we can have the greatest impact.

We utilize the following five-step process to admit suppliers into our sustainability network:

1. Based on supplier capability, the PCH Procurement Team or our customer identifies the best supplier.
2. We conduct an initial supplier evaluation. This involves a factory inspection by a member of each of the following PCH teams: project management (PM), supply base management (SBM), client quality management (CQM) and engineering.
3. To determine if the supplier meets PCH and/or our customer audit requirements, the PCH Sustainability Team conducts a factory readiness assessment.
4. The PCH Audit Team conducts an onsite Corporate Social Responsibility (CSR) risk assessment. The team rates supplier performance and management systems and identifies areas for improvement. Suppliers have three months to follow up on action items.
5. Once the supplier is admitted to the PCH network, the Sustainability Team conducts supplier development programs, including health and safety, system building, energy monitoring, chemical mapping and social programs.

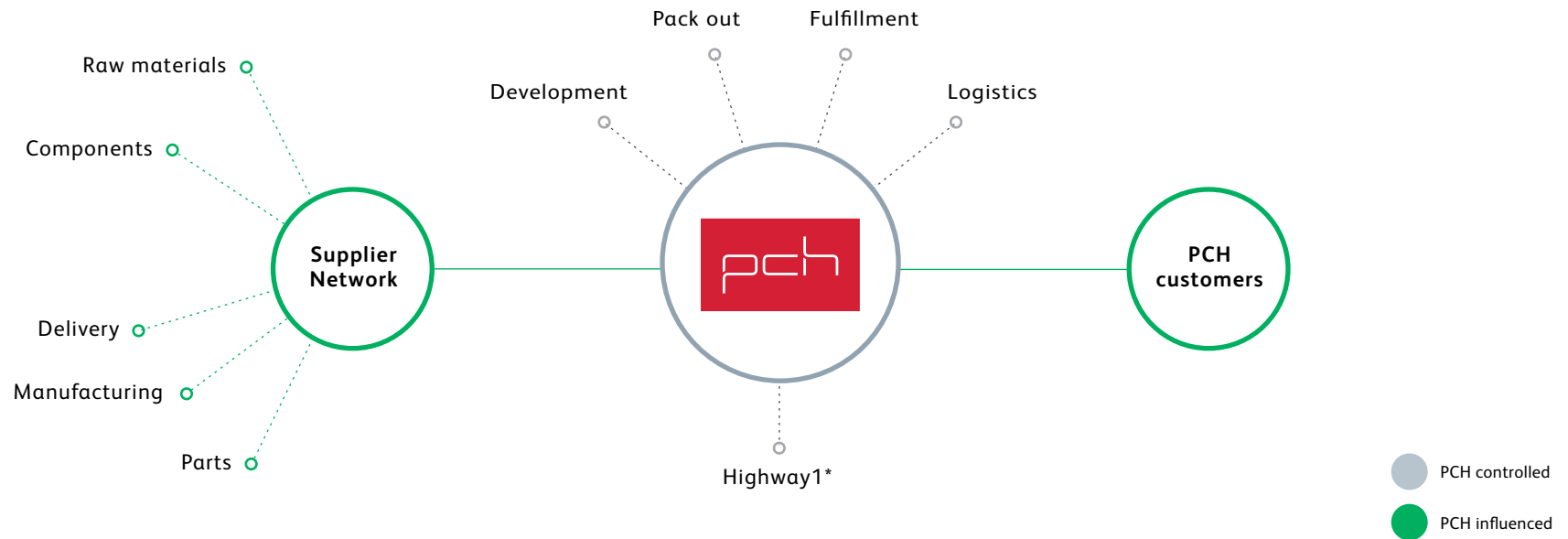
The supplier initial evaluation stage is designed to evaluate whether the supplier is likely to meet audit requirements. When it is clear the supplier will not pass an audit or be suitable for a given project, we move quickly to other supplier opportunities. Suppliers are evaluated on engineering and technical ability, quality management, project management and supply-based management. The supplier must score at least 60 out of 100 to be eligible for a PCH audit.

At PCH we have two types of suppliers: 1) those selected by PCH, and 2) those selected by our customers. For customer-selected suppliers, we do not conduct our own audits but work with our customers to conduct audits that meet their specifications.

We encourage and expect our network of suppliers to adhere to our Supplier CoC and to operate to the highest standards of social and environmental compliance, even beyond what is mandated. We continue to audit our supplier factories and influence our supply network to raise the bar on social and environmental compliance.

# The PCH Supply Network

To create products, multiple factories are often required. In turn, these factories utilize other factories to produce materials and components. The diagram below represents the possible complexity of the supply network for a product, as well as the influences and controls that PCH has over each link in the chain.



\* PCH controls these programs, but we are only positioned to influence the participating companies/startups involved.



Because we've operated in China for over two decades, we have fostered trusted and long-term relationships with our supplier partners. We emphasize the importance of sustainability with our customers, and we guide our suppliers regarding best practices, guidelines and policies that we must adhere to."

– Alan Cuddihy, vice president, sustainability



Wu Hui

## How We Manage Our Supplier Network

We follow industry best practices and consider the issues of social, environmental, health and safety impact and business risk when determining which suppliers to audit. Audits set a baseline; they cover quality, sustainability, chemical management practices, as well as Corporate Social Responsibility (CSR) issues. We cannot audit every supplier as this would require substantial resources. We focus on areas of the supply chain that pose the most risk. Annual audits identify preferred suppliers, with scores weighted at 50 percent for quality, 35 percent for social and environmental practices and 15 percent for chemical management.

## Audit Discoveries

When we review potential manufacturing partners, it is not only important that they pass our capabilities and quality criteria, but that they pass all Environmental, Health and Safety (EHS) and Corporate Social Sustainability (CSR) standards. When we find during an audit that a partner fails to meet these key standards, they are not qualified to be included on our AVL (Approved Vendor List). PCH does not allow engagements with partners outside of our AVL.

### Example of a Manufacturing Partner Who Failed Our Audit

We found upon auditing a potential partner in 2018 that 30 percent of their dispatch workers (temporary workers) did not have social insurance and they were unable to provide adequate salary records for their workers. Additionally, other key required EHS and CSR criteria were not met. For reasons below, this supplier failed our audit.

#### Wage Irregularities

- > Sick leave was not fully defined (salary for sick leave and other allowances)
- > Workers who quit were not paid within three days of their departure
- > Uniforms, as required, were not changed every six months

**Freedom of Association Violations:** No labor union or employee representation was found.

**Environmental Management System Violations:** environmental regulations require water to be recycled. We found the factory was discharging water directly into the land.

#### Emergency Preparedness Violations

- > Chinese government regulation requires that a qualified third-party agency must check the fire equipment once per month
- > The factory, as required, did not have written plans or procedures to prepare for such possible dangers as fire, chemical spills, earthquakes or hurricanes. There was also no definition for when workers could resume production
- > There were an inadequate number of emergency evacuation exits

### Hazardous Materials (Chemical Materials) Management

- > No record of chemical leakage drills
- > Fire drill records were not complete (final count of assembled people was not done)
- > Time to evacuate was too long (22 minutes)
- > There were not defined places for storing chemicals safely or Personal Protective Equipment and no Material Safety Data Sheet (MSDS)
- > No required signage for chemicals in production areas (no MSDS)

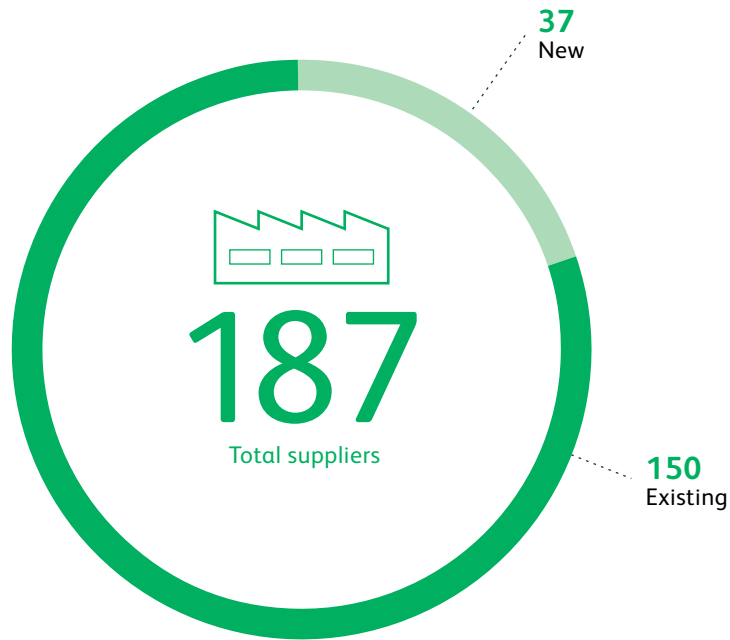
**General Management of Occupational Health and Safety:** There was no occupational health check recorded in 2017, and the 2018 report was not finished.

**Dormitory and Canteen:** There was no fire evacuation plan; no emergency exits; no masks being used during food preparation.

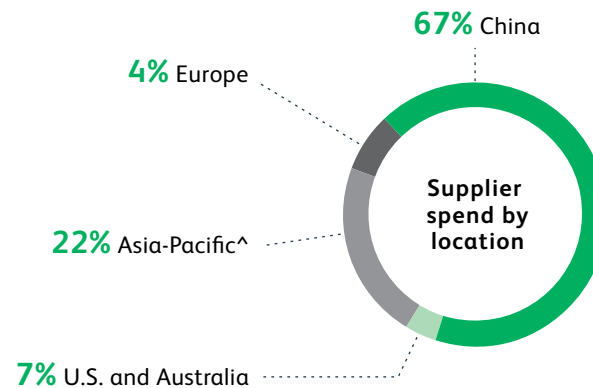
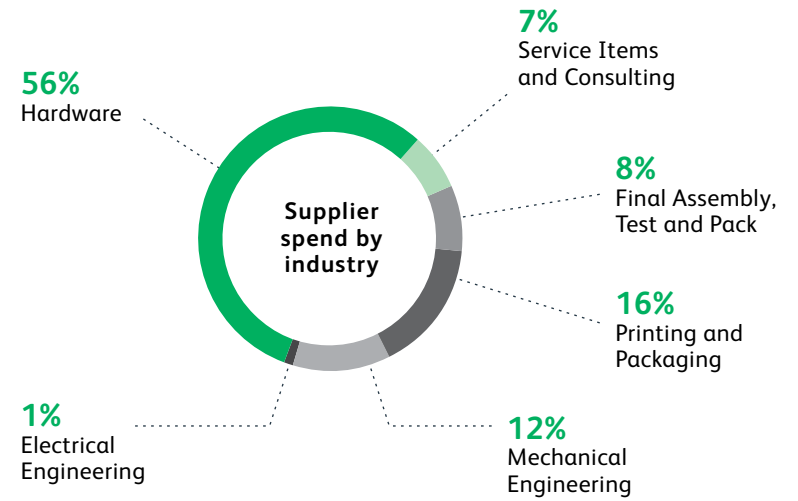
**Medical Emergency:** There was no qualified first aid personnel onsite and no information recorded on regarding processes and procedures in the event of an emergency.

PCH has a zero-tolerance policy towards child labor in our own or in supplier facilities. Child labor refers to any worker under the age of 16. All new hires to PCH have their identity and age verified by our HR team. For our suppliers, we follow industry recommendations and we check for child labor during our audit process. All 43 audits (including existing and new suppliers) conducted in 2018 included a check for child labor and prevention systems as well as factory floor spot checks. The audits showed no incidents of child labor.

# Suppliers PCH Transacted With in 2018



**1,000+**  
Number of suppliers in our network\*\*

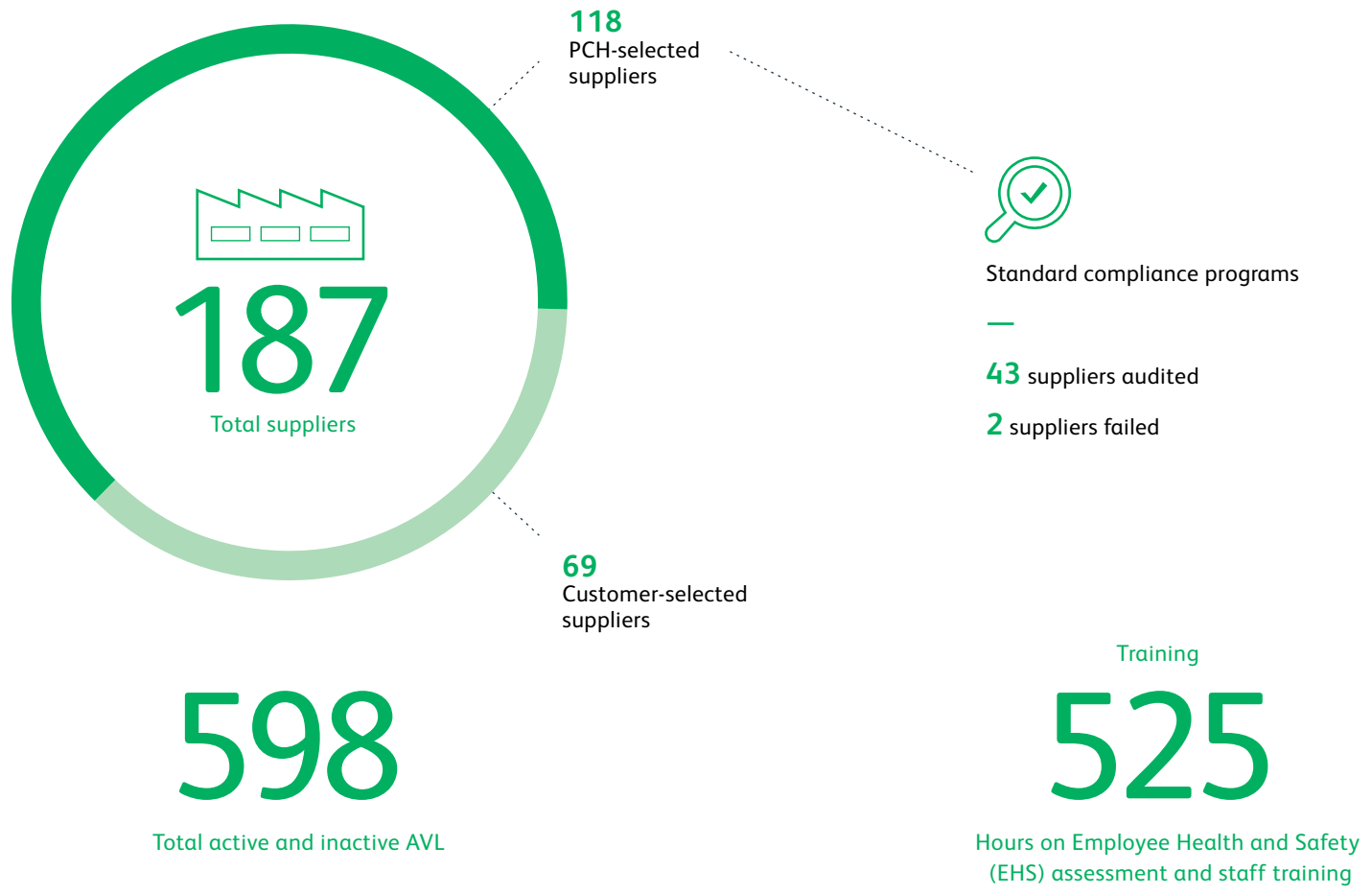


\* AVL (Approved Vendor List), active and inactive suppliers who PCH has fully qualified at some point. Active indicates they have been audited or re-audited within 12 months. If suppliers go inactive we re-audit them as needed to re-activate.

\*\* Non-AVL, suppliers from numerous categories and companies that have waivers as per our RBA guidelines.

^ Excludes suppliers in China.

# Our Supplier Audits



Audits are conducted in PCH-selected factories only.

# Supplier Facilities Health and Safety

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One of our greatest challenges is the health and safety of workers in our supplier network who don't work directly for PCH. We place great emphasis on making sure health and safety come first. It is the right thing to do in all cases. We recognize that quality products and services are dependent on safety in the workplace and adherence to social and environmental industry standards, guidelines and mandates.

## Strategies for Supplier Health and Safety

Health and safety management programs at supplier facilities include chemical management, fire safety, ventilation and electrical safety. Audits and daily spot checks cover emergency exits, equipment safety, chemical labels and other potential hazards. On an ongoing basis, we work with our suppliers to help them integrate health and safety procedures into their daily operations. This includes providing training and resources as well as identifying targets for continuous improvement.

When procedures are not in place, PCH establishes health and safety procedures at supplier factories, and PCH sets up Key Performance Indicators (KPIs), which measure how well the factory meets its targets. The intent is to integrate health and safety methods into the supplier's day-to-day operations.

## Pre-startup Safety Review

For high-risk safety situations, we conduct pre-startup safety reviews covering eight key areas: general safety, life safety, chemical management, occupational health, machine safety, electrical safety, environment management and emergency response. During the review process, engineering, production, program management and the Employee Health and Safety (EHS) teams get involved. By involving all project teams at an early stage, we ensure that everyone is aware of our safety standards and criteria. This early awareness and full team support minimizes accidents and improves overall safety. For low safety risk issues, our EHS team evaluates how any risk will be managed for all projects at the beginning (including supplier qualification on CSR issues).

## Pre-production Safety Considerations

The best way to engage suppliers on EHS management is by starting at the design engineering phase early in the project. PCH evaluates safety considerations and industry guidelines before each project begins, and before moving to production, we assess health, safety and environmental factors to identify and prevent EHS risk.



“ We help our suppliers integrate health and safety procedures into their daily operations. We provide training and resources, and identify targets for continuous improvement.”

– Jason Yu, operations director

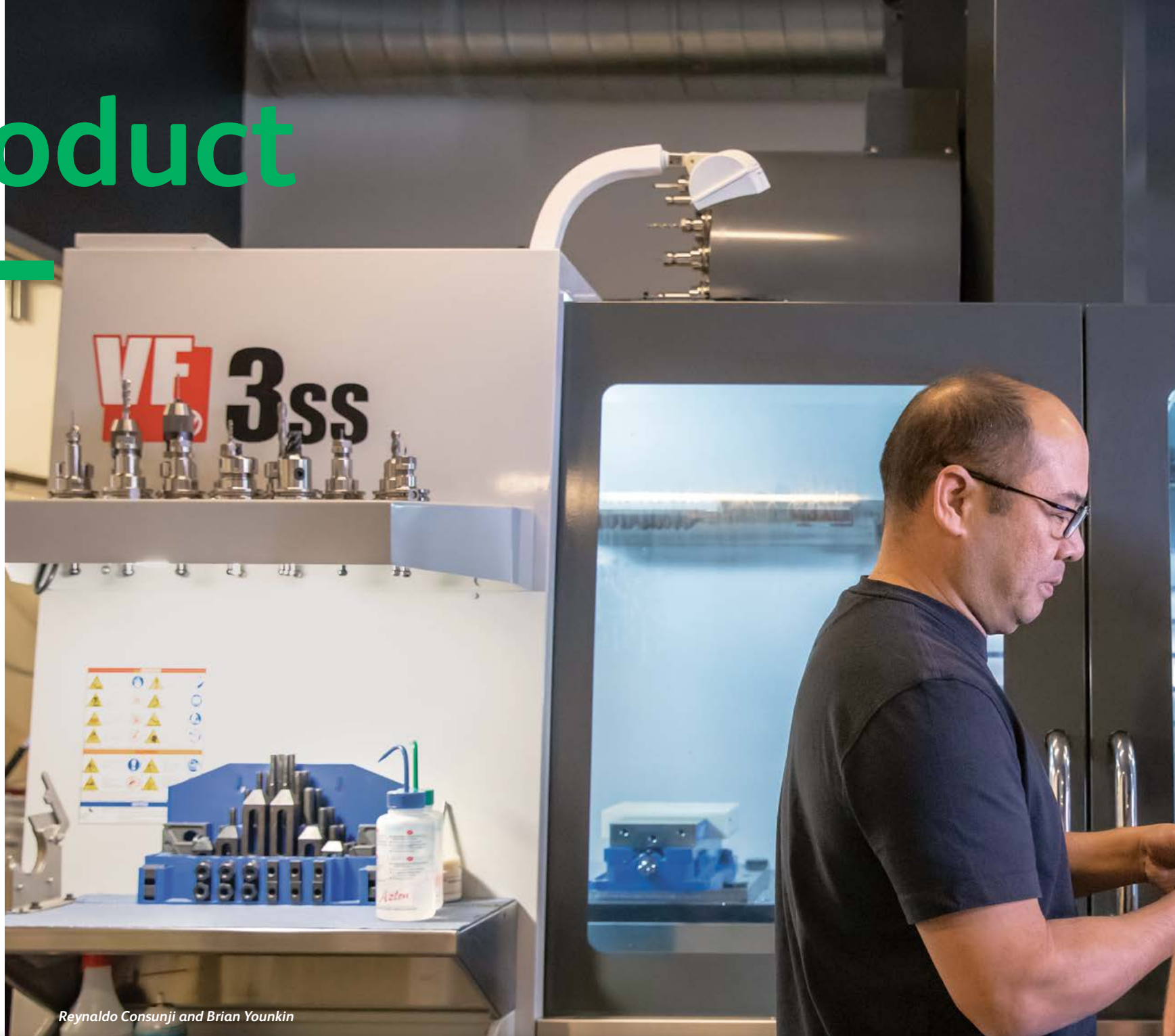


“ We have a zero-tolerance policy towards child labor. During our audits we conduct spot checks on suppliers. There were no incidents of child labor during 2018 audits.”

– James Kong, quality director



# Product



*Reynaldo Consunji and Brian Younkin*



Product sustainability addresses materials, chemicals, conflict minerals, packaging, shipping, inventory management and lifecycle analysis. We seize the opportunity to educate our customers about the impact of products at the exploration and engineering concept stage, all the way through to manufacturing, distribution and end-of-life. We also strive to influence industrial designers to consider sustainability early in their process.

**Life Cycle Analysis**

**Our Policy on  
Conflict Minerals**

**Managing  
Chemicals Safely**



*Ed Pataky and Jason Willis*

# Life Cycle Analysis

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Life Cycle Analysis (LCA) is now available to all PCH customers. LCA is the systematic approach to assessing the environmental impact of a product's entire life cycle, from raw materials to end-of-life disposal. Packaging LCA integrates sustainability into design to reduce packaging size and environmental impact and improve the customer experience.

We conduct packaging reviews with customers to help them make the best decisions about quality, cost and sustainability impact. We strive to design, develop and produce beautiful, sustainable solutions that have the maximum positive impact on the consumer experience and the least impact on the environment.



*Aling Rao*

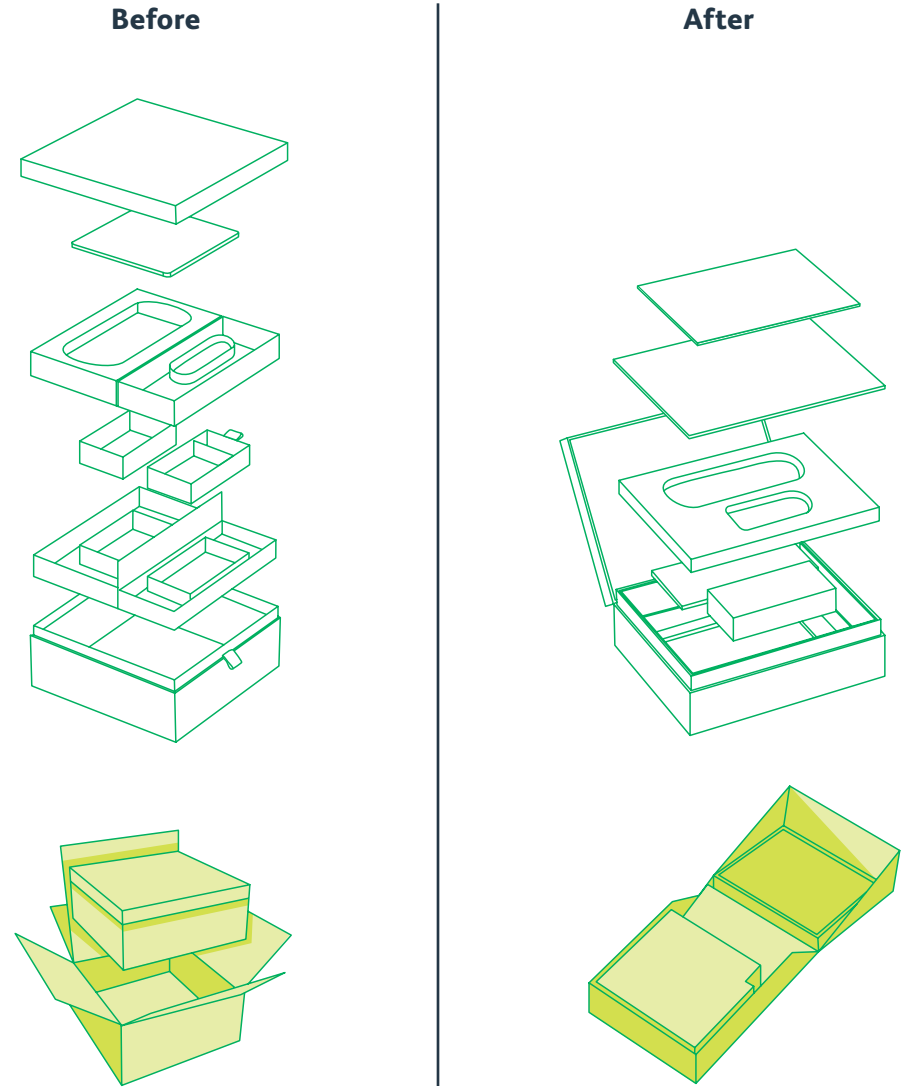
## Smarter, Sustainable Packaging

PCH helped one of our customers in the consumer goods industry scale their business by re-engineering their product packaging, which had been heavy, complex to assemble, large and off brand. The goal was to reduce the per unit shipping cost by reducing the weight and volume of the packaging while simplifying assembly, enhancing the out-of-box customer experience and increasing sustainability. The original packaging was costly to ship and consumed excessive energy and resources.

PCH achieved these savings by re-envisioning the packaging design to eliminate unnecessary internal package volume and using lighter, more sustainable packaging materials that reduced the unit weight and increased the product protection elements and matched their consumer branding elements.

PCH trimmed the overall volume of the shipper box by 36 percent, while increasing the product protection elements and reducing fossil fuel consumption by 19 percent and GHG emissions by 50.4 percent.

PCH achieved significant shipping cost savings (23 percent reduction in overall shipping costs) and met other key goals, including reducing the product's environmental impact, simplifying assembly (and thus reducing fulfillment cost), increasing the customer out-of-box experience and protecting the product during transit. The end result was an enhanced consumer experience (smooth and premium box opening feel) that was easy to assemble, less expensive to ship and more environmentally sustainable.



**36%**  
reduction

## Sustainable Packaging Design

	Old design	New design	Unit	Percentage change	Impact by project scale x 500000 units
Size	140 x 279 x 320mm	119 x 225 x 299mm	Millimeters		
Volume	12,499,200mm <sup>3</sup>	8,005,725mm <sup>3</sup>	Millimeters cubed (mm <sup>3</sup> )/unit	-36%	<b>-2,246.737m<sup>3</sup></b>
Cost of shipping	USD \$42.65	USD \$32.52	USD\$/pc from China to UK	-23.36%	<b>USD \$5,065,000</b>
Fossil fuel consumption	~32MJ	~26MJ	Megajoules (MJ)	-19%	<b>-3,000GJ</b>
GHG emissions	~0.353kg CO <sub>2</sub> e	~0.178kg CO <sub>2</sub> e	Greenhouse gas kg of CO <sub>2</sub> e equivalent	-50.4%	<b>~87,500kg CO<sub>2</sub>e</b>



# Our Policy on Conflict Minerals

It is a requirement in our Supplier Code of Conduct (CoC) that no conflict minerals be procured or used by PCH suppliers in the production of our customers' products. We welcome the advent of conflict minerals mapping as it encourages suppliers to be transparent and track potential use of minerals that are mined in areas of the world where there are armed conflicts and human rights abuses.

Most electronic manufacturers have a mapping system in place in accordance with the Organization for Economic Cooperation and Development (OECD) Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

## Anti-Corruption and Business Ethics

PCH has clear and consistent guidelines around Anti-Corruption and Business Ethics. Our procedures are documented for all employees and mandate a CoC for all supplier partners, which includes guidelines that are in accordance with RBA (Responsible Business Alliance) and CoC standards, and reflect our commitment to anti-corruption. These include:

- > Business integrity
- > No improper advantage
- > Disclosure of information
- > Intellectual property
- > Fair business, advertising and competition
- > Protection of identity and non-retaliation
- > Prevention of use of conflict minerals
- > Privacy

“ Our customers are concerned about which chemicals are used in their products and that they are safe for workers and consumers. We help our clients test for chemicals and prepare their chemical compliance documentation.”

– Sunny Zhu, sustainability program manager





# Managing Chemicals Safely

Proper chemical use within PCH facilities and our supplier factories is a health and safety priority. Hazardous chemicals are those that are poisonous, corrosive, explosive or ignitable and which may pose a hazard for people, equipment or the environment. Hazardous agents get into the body by inhalation more than any other route. Therefore, chemical exposure on the factory line is a critical concern and carefully monitored.

Careful use and monitoring of chemicals is critical, and we spend considerable effort and resources to identify and manage chemicals. In addition, our customers are increasingly interested in monitoring the chemicals that are being used in their products. To date, over 1,300 chemicals have been mapped and documented by the PCH Sustainability Team.

## Testing for Hazardous Substances and compliance documentation

We work with our customers to ensure that the chemicals used in their products are compliant with chemical directives and regulations. We also help our clients with chemical testing and preparation of required chemical compliance documentation, which is necessary for product registration and customs clearance.

## Our Chemical Safety Policy

It is important that PCH factory facilities and supplier partners maintain a Material Safety Data Sheet (MSDS) for each product being manufactured. An MSDS contains pertinent information about chemical ingredients, physical characteristics, proper handling, fire safety and emergency handling. When we examine chemicals, we consider both sacrificial materials that are used during the manufacturing process (that do not form part of the final product, as well as those that are part of the final product. These chemicals are used in processes such as coating, gluing, laminating, cleaning, electroplating, printing, screen-printing and painting.

How we address chemical management:

1. Possible elimination
2. Substitution at concept phase
3. Proper ventilation
4. Establishing a safe (according to guidelines) distance between the chemical and worker
5. Providing personal protective equipment (PPE)

When gathering chemical information, the strength of our relationship with suppliers is essential to our ability to secure accurate data and enforce protocols. Some suppliers, particularly sub-tier, are cautious about disclosing the chemicals they use. For this reason, we provide training on safe chemical selection and management, and work with them to be transparent, which is essential to our customers.

# Materiality and Stakeholder Engagement

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*Ed Pataky*



We conducted a formal materiality study and stakeholder analysis in 2015. We found that our materiality study and stakeholder analysis is still widely valid for 2018. However, we made some minor adjustments in certain areas to ensure the greatest accuracy. We did this by increasing our focus on sustainable product and packaging design. Despite it ranking low on the materiality index, it's increasingly being requested by customers.

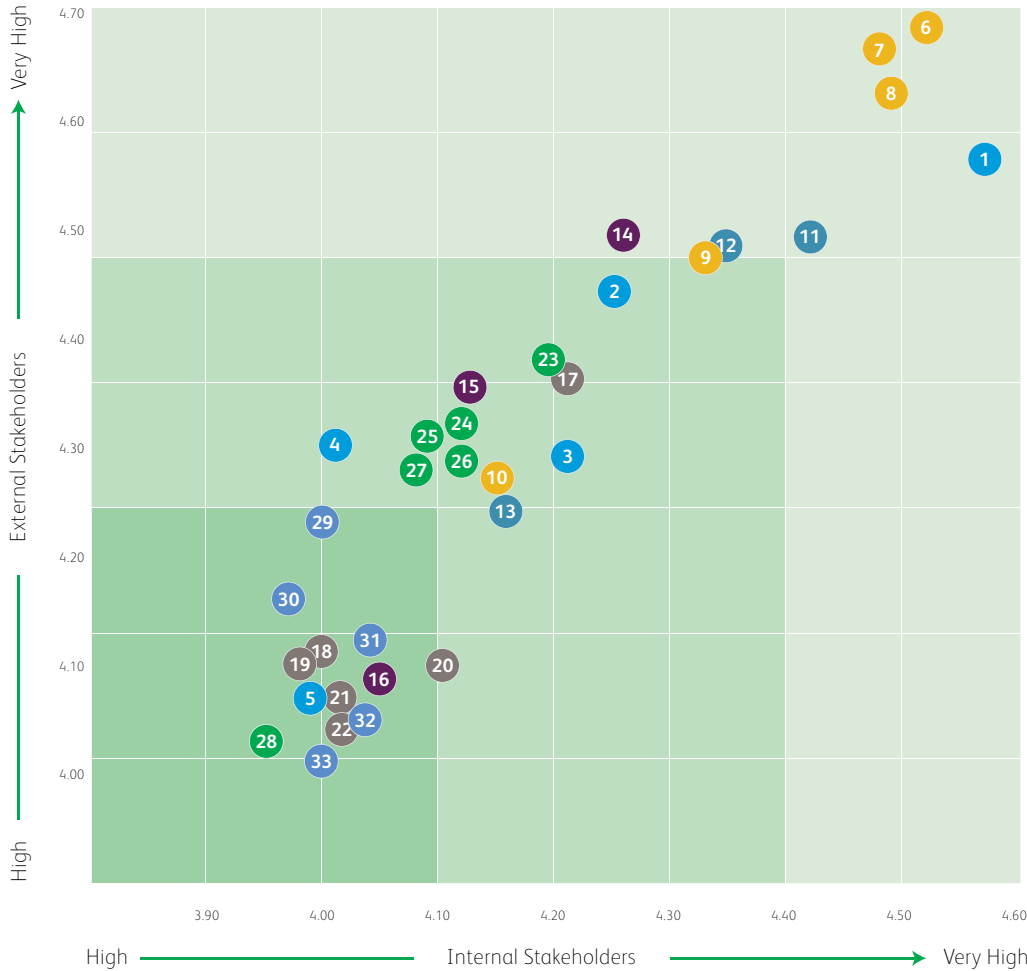
Understanding the material issues for our different stakeholders is essential for our business and in setting priorities. We will continue to review our material issues on an annual basis.

## Materiality Matrix

## How We Communicate With Stakeholders

## Sustainability Governance

# Materiality Matrix



## Management and Governance

- 1 Business integrity and ethics
- 2 Transparency and accountability
- 3 Risk and reputation management
- 4 Economic impacts
- 5 Internal communication and knowledge transfer

## Business Practices

- 6 Human rights protection/prevention of child labor
- 7 Client privacy and intellectual property protection
- 8 Compliance
- 9 Non-discriminatory pay
- 10 Fair business practices

## Industry Collaboration

- 11 Customer satisfaction
- 12 Product compliance
- 13 Accurate production planning

## Product/Service Delivery

- 14 Time, cost, price competitiveness
- 15 Product innovation to solve social/environmental problems
- 16 Accurate product and service labeling

## Environmental Management

- 17 Safe manufacturing
- 18 Waste reduction through inventory management
- 19 Alternative materials/chemicals
- 20 Supplier environmental performance
- 21 Sustainable packaging
- 22 Sustainable design

## Suppliers

- 23 Health and safety for all PCH employees
- 24 Supplier audits/code of conduct compliance
- 25 Anti-corruption
- 26 Supply network traceability
- 27 Responsible procurement practices
- 28 Grievance mechanisms

## Employees/Labor Practices

- 29 Fair wages and working hours
- 30 Training/career development opportunities
- 31 Diversity and equal opportunity
- 32 Recruitment and retention
- 33 Labor management relations

# How We Communicate With Stakeholders

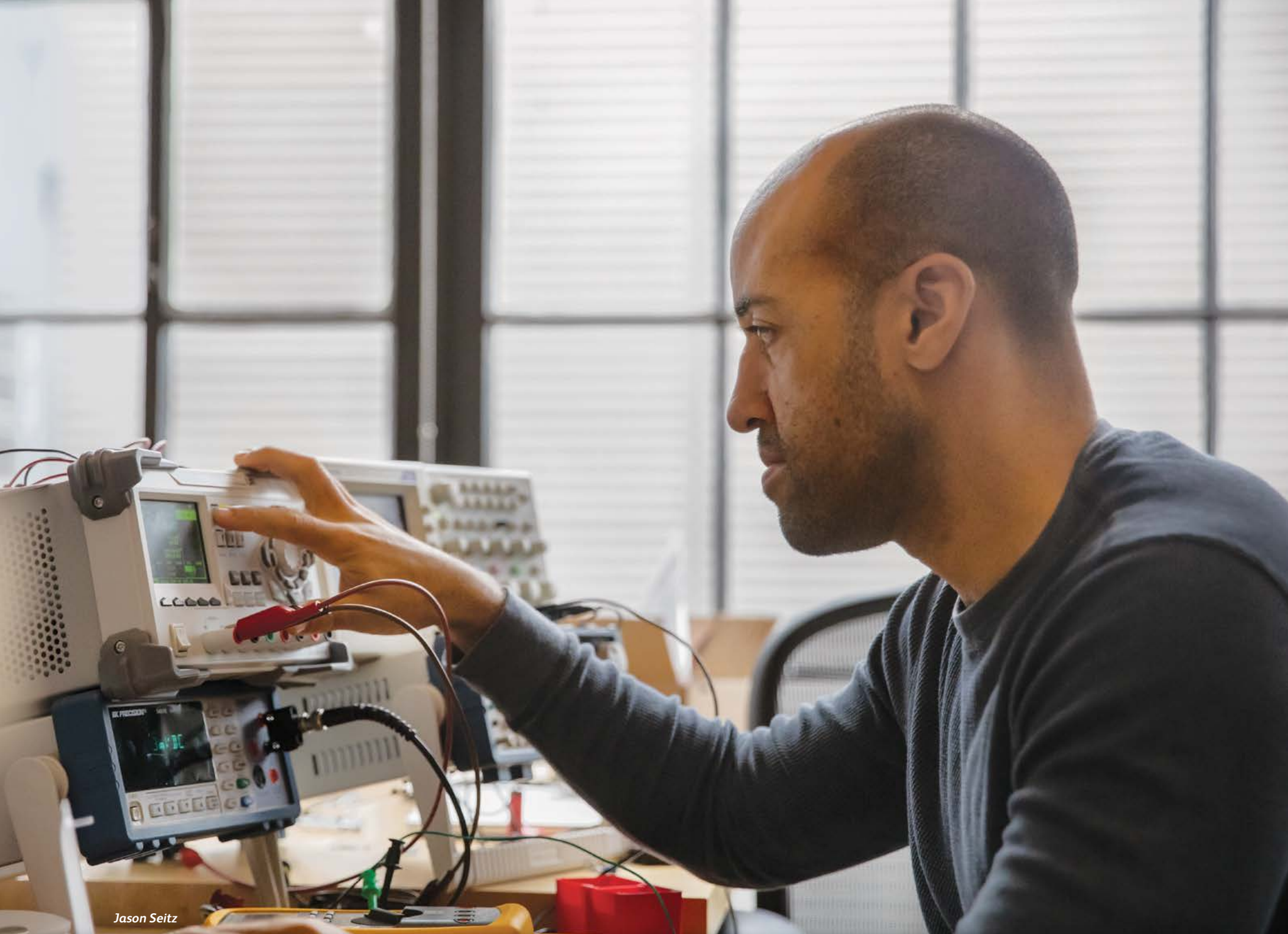
Stakeholder Group	Location	ALL-HAND'S MEETINGS	AUDITS	CONFERENCES	EVENTS	FACE-TO-FACE	LITTLE BIRD	MICROBENEFITS	MEDIA	NEWSLETTER	POSTERS	RECRUITMENT FAIRS	SURVEYS	SUSTAINABILITY REPORT	THROUGH CLIENTS	TOWN HALLS	TRAINING	WEBSITE	WORD-OF-MOUTH
PCH Factory Employees	China	●				●	●	●	●	●				●	●				
PCH Corporate Employees (Global)	Global	●				●			●	●			●	●	●				
PCH Office Employees in Factory	China	●				●			●	●			●	●	●				
Large Clients	Global			●	●	●		●					●			●			
Medium Clients	Global			●	●	●		●					●			●			
Small Clients (Startups)	Global			●	●	●		●					●			●			
Pro-social Entrepreneurs	Global			●	●	●		●					●						
PCH-selected Suppliers	China		●			●	●						●			●			
Investors and Board of Directors	Global					●							●						
Factory Owners	China		●			●										●			
Supplier Employees	China		●			●	●									●			
PCH Dispatch Agency Hires	China					●	●									●			
Non-governmental Organizations	Global			●		●							●			●			
Prospective Customers	Global			●		●		●					●						
Customer-selected Suppliers	Global		●			●										●			
Local Communities	China /U.S./ Ireland							●											

Stakeholder Group	Location	AGENCIES	AUDITS	CONFERENCES	EVENTS	FACE-TO-FACE	LITTLE BIRD	MICROBENEFITS	MEDIA	NEWSLETTER	POSTERS	RECRUITMENT FAIRS	SURVEYS	SUSTAINABILITY REPORT	THROUGH CLIENTS	TOWN HALLS	TRAINING	WEBSITE	WORD-OF-MOUTH
Media and Social Media	Global	●		●	●	●		●						●					●
Prospective Workforce	Global	●		●	●	●		●				●		●					●
Factory Landlords	China					●													
Supplier Dispatch Workers	China					●													
Dispatch Agencies	China	●																	
Peer Companies	Global			●	●	●								●					●
Academia	Global			●		●		●						●					●
End-of-life Recycling Plants	Asia /U.S./ Europe					●													
Industrial Service Providers	China					●													
Direct Consumers	Asia /U.S./ Europe							●						●	●				●
Other Consumers (End-product)	Asia /U.S./ Europe							●						●	●				●
Trade Unions	China					●													
Industry Associations	Global			●	●			●						●					●
Retail Stores	Global			●	●			●							●				
Logistics Companies and Freight Forwarders	Global													●	●				
Agencies and Consultants	Global			●	●			●											●
Design Associations and Design Consultants	U.S.	●		●	●			●						●					

# Sustainability Governance

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- > The PCH Sustainability Team has influence across all our divisions. The Sustainability Team is involved at all stages of the business: product development, supplier selection, supplier development, packaging and distribution. The Team is heavily influential in the areas of Employee Health and Safety (EHS), including compliance, workforce engagement, resource efficiency and safe handling of chemicals and other materials.
- > PCH is governed by a Board of Directors who delegate governance and responsibility for sustainability to the PCH Senior Leadership Team.
- > The Chief Financial Officer (CFO) oversees sustainability initiatives at PCH.
- > Each program is initiated within our China-based Sustainability Team, led by the Head of Sustainability. Details are reported to the CFO to ensure there is a viable business case for each project.
- > Programs focus on supplier network development, EHS, worker engagement, social initiatives and industry partnerships.
- > Sustainability reviews are conducted on product and packaging across PCH platforms in the U.S. and China, including new project proposals.
- > The Chief Executive Officer, Chief Financial Officer and Senior Leadership Team review all programs.
- > The PCH Audit Team conducts all China-based supplier qualification audits for labor, environmental and chemical management practices.
- > PCH-owned factories have a Sustainability Committee with Labor, EHS and Ethics subcommittees.
- > Individual offices champion CSR initiatives across the organization, including volunteering, diversity, internships and charitable giving.
- > Our suppliers are expected to adhere to our Supplier Code of Conduct (CoC).



Jason Seitz

# Looking Ahead



*Josh Kagan, Hugo Ortiz and Michelle McCarthy*








We work in a dynamic industry that requires shorter production cycles, increased factory sophistication and greater demand for personalized products. Non-tech industries such as fashion, beauty and entertainment are entering the hardware market. We will continue to expand our profitable growth opportunities by focusing on product development, specialized manufacturing, fulfillment and supply chain orchestration.








We welcome that end consumers are asking more questions about the origin of products, their impact on the environment and product life cycle. PCH seeks to lead the industry in providing transparency.

## Our Sustainability Progress in 2018

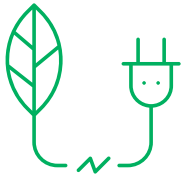
## 2019 Sustainability Goals

# Our Sustainability Progress in 2018

 More to do
  Ongoing
  Complete

Status	2018 Goals	Update	2019 Goals
	Assessment of current sustainability structure within PCH and identify how modifications can help achieve longer term goals.	Decision was made in 2018 on restructure of Sustainability function to report directly to CEO.	Appoint Global VP, Sustainability, reporting directly to CEO
	Expand to include more product materials and the removal of single-use plastics as a near-term focus.	All packaging design work to include Life Cycle Analysis and sustainable materials.	Finalize strategy for integration of carbon neutrality options for design and delivery of products. Internal procedures to be defined in preparation for rollout of carbon neutral product strategies.
	Rollout updated grievance mechanism initiative across all PCH locations.	PCH Employee Handbook updated to ensure grievance mechanism in place, procedure outlined, and acknowledged by all employees.	Complete
	Develop corporate partnership with sustainability bodies in additional industries; develop roadmap for future collaboration.	PCH continues to engage with sustainability-focused organizations with a view to growing our network of potential partners in this area	PCH to host sustainability-themed events at our facilities. Encourage cross-industry collaboration on addressing sustainability challenges.
	Restricted Substance List (RSL) standardized and applied across all projects.	PCH procedures developed to work with supply network on control of restricted materials. Supply network provides material declaration for PCH project team verification. PCH controls against RSL requirement plus additional customer-specific requirements.	Ensure flexibility in procedure to allow for continuous restriction of harmful materials, with the ability for additional restrictions based on customer requirements. PCH project team to set and declare standards to which Supply Partners must adhere to in order for AVL compliance and project kick-off.
	Explore and enable possible transition of our partner from NGO to social enterprise partnerships to help prepare for scale to meet long-term goals.	Ongoing	Working on structural change with this partner to ensure no loss of capacity during transition to social enterprise, continues in exploratory phase.
	All consigned suppliers meet AVL standard.	Current status is customer-dependent. In some cases suppliers may meet criteria for audit waiver, in accordance with Responsible Business Alliance guidelines.	PCH will continue to engage with customers on AVL auditing strategy. PCH will carry out consigned supplier inspections on customer's behalf.

# 2019 Sustainability Goals



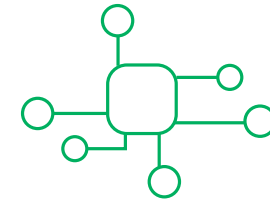
Continue to enhance long-term sustainability goals for the Company.



Continue to develop Materials Library, encouraging clients to choose less harmful chemicals/materials/processes.



Increase engagement with sustainability leaders in other industries, e.g., apparel, cosmetics, etc. to incorporate best practices.



Establish additional Supply Network development programs, partnering with third-party service providers for ease of scale. Programs to focus on waste reduction, manufacturing efficiency.



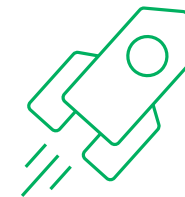
Continue to develop and deploy Restricted Substances List (RSL) for customers who do not have their own RSL.



Continue to assess sustainability issues for supply base consigned by our clients.



Develop capability to offer PCH customers full Life Cycle Analysis (LCA) reports on product, along with existing capabilities on packaging.



Creation of dedicated cross-platform sustainability initiatives focused on startups and hardware companies that are preparing to scale. Initiatives are tailored to requirements for small and medium size enterprises.

# About This Report

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*Graham Hough*



This is our seventh annual Sustainability Report and covers the year 2018 at PCH. Our 2012 - 2017 Reports can be accessed on our [website](#).

Our 2018 Report covers all PCH business units and entities. This is not a report on the financial condition of the organization. Because we are a privately held company, we do not disclose certain financial information, capitalization structure of the organization or details of the share capital and executive board structure of the organization in this Report or in any public forum. Mutual non-disclosure agreements prevent us from naming our suppliers and customers in many cases. Many suppliers and customers do not wish to be named to protect trade secrets and maintain their competitive advantage. We respect this and are working with our partners towards a more transparent future.

**Our Reporting  
Guidelines**

**Glossary  
of Terms**

**Information  
in This Report**

**GRI Index**

# Our Reporting Guidelines

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Our sustainability reporting follows industry and sustainability standards, including the United Nations Global Compact (UNGC) Communication on Progress and the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines. This Report has been prepared in accordance with the GRI Standards: Core option.

In compiling this Report, we incorporated the principles for defining report content, namely: stakeholder inclusiveness, sustainability context, materiality and completeness. We strive to ensure the principles for defining report quality are also met, namely: balance, comparability, accuracy, timeliness, clarity and reliability. We have not sought independent assurance of this Report.

All data in this Report is based on the best possible methodologies currently available and is aligned with recognized standards. Greenhouse gas (GHG) emissions data is subject to inherent uncertainties because of incomplete scientific knowledge used to determine emission factors and measurements. Our GHG emissions accounting and reporting are aligned with the GHG Protocol, and the emission factors we use are from publicly available sources such as the International Energy Agency (IEA). The reported energy usage is based on invoiced utility data, data reported by transport providers and suppliers and data from real-time electricity meters.

Monetary amounts are reported in U.S. dollars. Additional currency values are conversions based on the conversion rate on December 31, 2018, unless stated otherwise.

# Information in This Report

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The information in this Report may contain forward-looking statements. Such statements reflect management's current expectations. Although management believes such statements to be reasonable, no assurance can be given that such expectations will prove correct. Such statements are subject to risks and uncertainties, and such future events could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic, market or competitive conditions, success of business and operating initiatives, changes in the regulatory environment and other governmental actions and business risk management. Any forward-looking statement made in this Report relates only to events as of the date on which the statement is made. We undertake no obligation to update any forward-looking statements to reflect new information, except as required by law.

# Glossary of Terms

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**AVL:** Approved Vendor List.

**BOM:** Bill of Materials. A list of raw materials, subassemblies, intermediate assemblies, subcomponents, parts and the quantities of each required to manufacture a product.

**B2B:** Business to Business.

**B2C:** Business to Consumer.

**B2D:** Business to Distributor.

**Cell Based Manufacturing:** The manufactory production line set up as small cell.

**Channel:** (Fulfillment) Distribution channels such as retail, ecommerce and direct-to-consumer.

**Chemicals:** Substances and chemical compositions that are additives to the manufacturing process such as adhesives,

paint, ink, cleaning agents and thinners. Included are chemicals that form part of the final product as well as sacrificial chemicals (those that are not part of the final product).

**CQM:** Client Quality Manager.

**CRM:** Client Relationship Manager.

**CoC:** Code of Conduct.

**Consumer:** End customer of our customers.

**Consumer Engagement:** The (emotional) connection between a brand and its customers that increases retention and promotes loyalty.

**Continuity of Supply:** The stability and continuity of supply.

**CM:** Contract Manufacturer.

**CSR:** Corporate Social Responsibility.

**Corporate Staff:** All non-operator (non-factory) employees who work in PCH offices.

**COGS:** Cost of Goods Sold is the direct costs attributed to the production of the goods sold.

**Customer:** A customer of PCH.

**Customization:** The process of creating a unique order for an individual customer, market, region or retailer.

**Demand Planning:** Customer's demand analysis.

**Demand Pull:** LEAN production system by which shipments (demand) trigger production starts.

**DFA:** Design for Assembly is a process by which products are designed for efficiency and ease of assembly.

**DFM:** Design for Manufacturing is the engineering practice of designing products, so they are easy to manufacture.

**DFP:** Design for Procurement.

**DFT:** Design for Testing.

**Design Engineer:** Research and develop ideas and systems for manufacture. Improve the performance and efficiency of existing products.

**DVT:** Design Validation Test.

**DVU:** Design Validation Units.

**Development Engineer:** Oversees research and design teams, lead testing procedures and draft specifications for manufacturing.

# Glossary of Terms

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**Dispatch Worker:** Factory operators who work in PCH facilities who are hired and managed by a third-party dispatch agency.

**Employee:** Any person who has an employment contract with PCH, excluding supervised workforce.

**EHS:** Employee Health and Safety, also referred to as Environment, Health and Safety in our industry.

**EOL:** End of Life.

**End-to-End:** The product journey from concept to consumer.

**EVT:** Engineering Validation Test.

**E&O:** Excess and Obsolete.

**Facility:** A factory building; one factory business might have multiple facilities.

**Factory:** A manufacturing, logistics, fulfillment or distribution business. Some factory businesses are a collection of facility buildings.

**Factory Office Staff:** All non-operator employees who work in factory offices.

**FDA:** U.S. Food and Drug Administration.

**First Pass Yield:** Number of good units of products completed through the production process with no scrap or rework.

**Fulfillment:** The process of preparing and delivering a consumer order.

**Global Network:** Relationships with suppliers worldwide.

**GRI:** Global Reporting Initiative.

**IoT:** Internet of Things is the network of devices, vehicles and home appliances which use technology to connect, interact and exchange data.

**IP:** Intellectual Property.

**Jig and Fixture:** The mechanical tools used on production lines to help increase the accuracy and efficiency of the production process.

**JDM:** Joint Design Manufacturing.

**Just-in-Time:** Lean supply chain.

**KPI:** Key Performance Indicator.

**Lean Manufacturing:** A production methodology that focuses on minimizing waste within manufacturing systems while simultaneously maximizing productivity.

**LCA:** Life Cycle Analysis is the assessment of all environmental factors of a product's life, from raw materials to end of use.

**Logistics:** movement of the products from suppliers to end consumer.

**Manufacturing Partner:** Strategic manufactory that PCH wants to work together with for long term.

**MPS:** Mass Production Schedule

**Material Safety Data Sheet (MSDS):** A document that contains information on a material's potential hazards of (health, fire, reactivity and environmental) and how to work safely with the material.

**Materials Management:** The management of materials planning, purchasing, production and delivery, to fulfill the demand.

**New Generation Supply Chain:** Asset-light supply chain that is highly flexible.

**NPI:** New Product Introduction is a phase in manufacturing when processes are refined and validated through pilot builds and capabilities studies to capture issues early in order to resolve them.



# Glossary of Terms

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**OEL:** Occupational Exposure Limit is a regulation that sets maximum exposure levels of chemicals and other hazardous materials in workplace air.

**OTS:** Off The Shelf, referring to product currently being designed and manufactured.

**OTD:** On Time Delivery.

**Operator:** Factory production staff (line operators, warehouse and logistics staff) hired by PCH or our suppliers on a full-time or supervised basis.

**Operations:** The whole facility's daily management including production, shipment, quality.

**Orchestration:** Management and optimization of a customer's supply chain to return value to the brand.

**OECD:** Organization for Economic Cooperation and Development.

**ODM:** Original Design and Manufactory.

**Pack Out:** The final step (often including packaging and labeling) before shipment to customer.

**PPE:** Personal Protective Equipment such as protective clothing, helmets, goggles or other garments or equipment designed to protect the wearer's body from injury or infection.

**Personalization:** The process of creating a unique product utilizing such methods as monogramming, etching and printing.

**Platform:** A system structure where we can share data and communicate internally and externally.

**PSSR:** Pre-Startup Safety Review is a tool that incorporates safety measures in pre-production design and processes.

**Procurement:** Purchasing.

**PDM:** Product Development Management.

**PP:** Production Planning.

**Production Ramp:** The increase in factory production and labor required to meet manufacturing production demand.

**PVT:** Production Validation Test.

**PRD:** Product Requirements Document.

**PM:** Program Manager.

**Prototype:** An early sample, model, build or release of a product created to test product features and design concept before investing time and money in production.

**QMS:** Quality Management System.

**Raw Material:** Any non-living matter, whether natural or man-made, which combine to make customer products such as plastic components, metals, leather and fabrics.

**RACI:** A matrix used to assign roles and responsibilities for each task, milestone, or decision on a project. RACI stands for Responsible, Accountable, Consulted, Informed.

**RBA:** Responsible Business Alliance.

**RSL:** Restricted Substance List, which includes hazardous chemicals and raw materials and possible alternatives.

**Senior Leadership Team:** The team of PCH Senior Executives designated by the Board of Directors to manage PCH business, including but not limited to the Chief Executive Officer and Chief Financial Officer. The team is also designated with responsibility of sustainability leadership at PCH.

**SOW:** Statement of Work defines the specific services (work activities and deliverables) that a contractor is expected to perform.

# Glossary of Terms

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**SOP:** Standard Operating Procedure.

**Supplier:** A factory not owned by PCH that supplies products, goods or services to PCH and our customers.

**Supplier Partner:** Strategic supplier that PCH wants to work together with for the long term.

**SIPOC:** A SIPOC (sometimes COPIs) is a tool that summarizes the inputs and outputs of one or more processes in table form. The acronym SIPOC stands for suppliers, inputs, process, outputs and customers, which form the columns of the table.

**SBM:** Supply Based Management.

**Supply Chain:** Supply channels from raw material and components to finished goods.

**Supply Planning:** Material planning.

**Sustainability:** Focus on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: economic, environmental and social.

**Sustaining Production:** Sustainable production.

**Transport and Logistics Partner:** Strategic logistics supplier that PCH wants to work together with for the long term.

**Tooling:** Molding.

**UNGC:** UN Global Compact.

**Vendor:** All PCH suppliers, including factories, sample part suppliers, office supplies, goods and services.

**Vertical Integration:** Consolidation of upstream and downstream supply chain.

**Visibility:** Clear information which is visible and transparent.

# GRI Index

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PCH follows the GRI Standards, an internationally recognized framework for disclosing economic, environmental and social performance. This report has been prepared in accordance with the GRI Standards: Core option.

# GRI Index

	Disclosure	Description/Detail	Location in Report/Detail/Omission Explanation	Page
<b>General Standard Disclosures</b>				
<b>Organizational Profile</b>	102-1	Name of organization	PCH Intl.	92
	102-2	Products and services	About PCH: What We Do	13
	102-3	Headquarters	Cork, Ireland	34
	102-4	Locations	Our Key Operations	34
	102-5	Ownership	About This Report	82
	102-6	Markets served	Our Key Operations	34
	102-7	Scale	PCH in 2018	15
	102-8	Employees	About Our People	42
	102-9	Supply chain	Partnering with Our Suppliers	54
	102-10	Significant changes	Message from Liam Casey	5
	102-11	Precautionary Principle	N/A	
	102-12	External initiatives	PCH is a signatory of the United Nations Global Compact.	
	102-13	Association memberships	United Nations Global Compact	82
<b>Strategy</b>	102-14	CEO Statement	Message from Liam Casey	5
<b>Ethics</b>	102-16	Values and Code of Conduct	Employee Guidelines, Supplier Code of Conduct	43, 54
<b>Governance</b>	102-18	Governance structure	Sustainability Governance	74
<b>Stakeholder Engagement</b>	102-40	Stakeholder groups	How We Communicate with Stakeholders	73
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	102-44	Key Topics	Materiality Matrix	72
<b>Reporting Practice</b>	102-46	Defining report content	Our Reporting Guidelines GRI Index	82 86
	102-47	Material topics	GRI Index	87
	102-48	Restatements	N/A	
	102-49	Changes in reporting	N/A	
	102-50	Reporting period	Calendar year 2018 unless otherwise noted	81
	102-51	Date of most recent report	March 15, 2019	
	102-52	Reporting cycle	Annual	81
	102-53	Contact point for questions	Alan Cuddihy, vice president, sustainability, alan@pchintl.com	
	102-54	GRI in accordance option	Core	82
	102-55	GRI content index	GRI Index	87
	102-56	External assurance	N/A	
<b>Specific Standard Disclosures</b>				
<b>Economic</b>				
<b>Procurement Practices</b>	204-1	Proportion of spending on local suppliers	Supplier Spend by Location	58
<b>Anti-Corruption</b>	205-1	Anti-Corruption guidelines	Anti-Corruption and Business Ethics	68

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<b>Energy</b>	302-1	Energy Consumption	Resource Use	39
<b>Water</b>	303-5	Water consumption	Resource Use	39
<b>Emissions</b>	305-2	Indirect (Scope 2) GHG emissions	Resource Use	39
<b>Waste</b>	306-2	Waste by type and disposal	Resource Use	39
<b>Environmental Compliance</b>	307-1	Non-Compliance with environmental laws and regulations	We have never been fined or had any incidents of non-compliance with regulations or laws in the jurisdictions in which we operate.	
<b>Social</b>				
<b>Labor/ Management Relations</b>	402-1	Minimum notice periods for operational changes	In the event of any change to our operations that would significantly affect our factory employees, up to three days' notice is provided by the HR department. When any employee is no longer to be employed by our factories, they receive at least one-month notice from factory management.	
<b>Occupational Health and Safety</b>	403-1	Occupational health and safety management system	Worker Health and Safety	43
	403-9	Work-related injuries	Worker Health and Safety	43
<b>Training and Education</b>	404-2	Programs for upgrading employee skills	Career Enhancement Opportunities	45
<b>Diversity and Equal Opportunity</b>	405-1	Diversity of governance bodies and employees	Diversity	48
<b>Child Labor</b>	408-1	Operations and suppliers at significant risk for child labor	Audit Discoveries	56
<b>Marketing and Labeling</b>	417-1	Requirements for product information and labeling	For product labeling such as European Conformity (CE), U.S. Food and Drug Administration (FDA) or labeling approval for a particular market, our customers instruct us on their labeling requirements.	



*James Kong, Bella Huang and Rinna Zeng*



#### NORTH AMERICA

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##### SILICON VALLEY PCH Innovation Hub

135 Mississippi Street  
San Francisco, CA  
94107  
USA

#### ASIA

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##### SHENZHEN, CHINA PCH Innovation Hub

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Logistics Centre  
8 Tao Hua Road  
Futian Free Trade Zone,  
Shenzhen, China

#### EUROPE

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