Thriving in the Circular Economy

Frances Edmonds

Head of Sustainability

HP Canada

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Agenda

- Why do we need a circular economy?
- What's your value chain?
- Definition & benefits of the Circular Economy
- Examples and issues
- Procurement: quick fix or starting point to drive circularity
- HP's work in the Circular Economy
- The next industrial revolution?
- Your take aways

hp

Facing the challenges of this century

- Global population is on pace to hit 9.4 billion by 2050

- There has been a 95% increase in human population since 1970

- Global middle class is expected to reach 3.6 billion by 2030

- In the next 20+ years, energy use will rise 53%, GHG emissions will rise by 43%, and demand for water will be 40% higher than supply

2.3

Number of Earths we'll need by 2050

Today we live as if we were <u>not</u> on a finite planet…..

Imagine 3 things we – you? would do differently if we lived as we need to in a finite world (or a low carbon economy)

www.youtube.com/watch?v=zCRKvDyyHml
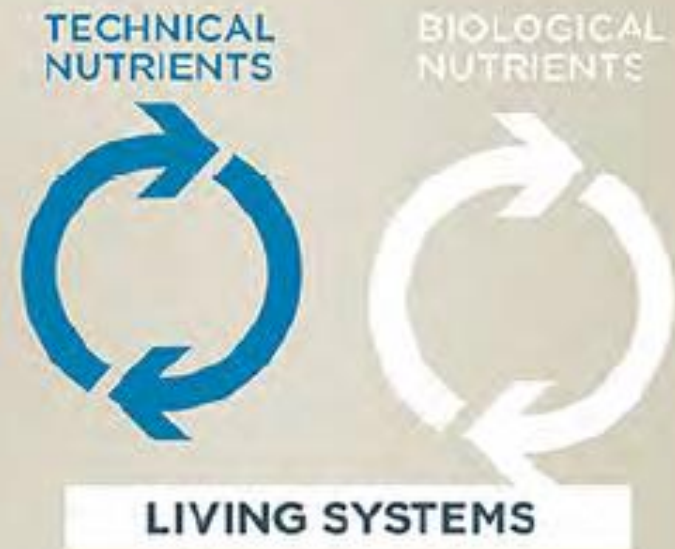
Ontario's Environmental commissioner's report on climate change

What Can I Do?

- Climate cannot be left up to government

- Reduce your carbon footprint
- Speak up
- Get ready to adapt

- It's not too late

Environmental Commissioner of Ontario

How many of you have measured your personal &/or business carbon footprints?

GHGs: Where are we now?

HP full Carbon footprint 2015 ... 45,432,100 tonnes CO_2e

Supply chain	Operations	Products and solutions
41%	**6%**	**53%**

In 2015, our carbon footprint was 11% less than 2014

Supply chain GHG emissions
tonnes CO_2e

- 16,600,000 — Materials extraction through manufacturing
- 400,000 — Capital goods
- 300,000 — Upstream energy production
- 1,500,000 — Transport

Operations GHG emissions
tonnes CO_2e

- 1,321,200 — Facilities
- 110,900 — Transportation fleet
- 200,000 — Commercial air travel
- 900,000 — Employee commuting

Products and solutions GHG emissions
tonnes CO_2e

- 24,100,000 — Product use
- De minimis — Product end of life
- De minimis — Buildings leased to others
- De minimis — Investments

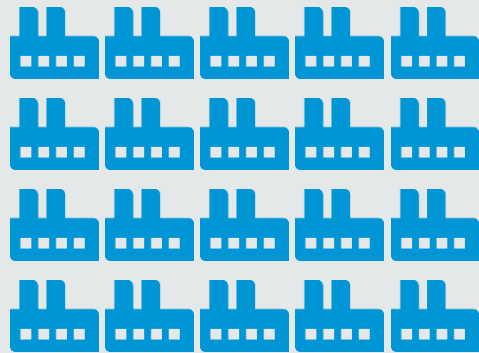# HP in action: supply chain responsibility

HP progress

First IT company

To require direct employment of foreign migrant workers in supply chain

84% Suppliers in SER scorecard program showed effective or exceptional performance

78,000 Factory workers were reached during the year through training and empowerment programs

92% Of smelters are conflict-free or on the way to becoming conflict-free

hp

Circular Economy Definition

*An industrial system that is restorative or regenerative by **intention and design.** It replaces the **end-of-life concept with restoration**, shifts towards the use of renewable energy, eliminates the use of toxic chemicals and aims for the **elimination of waste** through the superior design of materials, products, systems and business models.*

Ellen MacArthur Foundation, 2014

Circular Economy themes

Keep products & materials at their highest utility & value

Prevent waste through new business models

Lengthen product life through reuse, repair or manufacture

Improve end of life processing & recovery

HP Instant Ink

Business Models that change design and consumer behavior

Web-based ink replacement service ensures customers never run out of ink when they need it

Up to
67%

Less waste
Per printed page

Customers save up to **50%** on ink

97%
Satisfaction rate

Over 2 million subscribers world wide

Instant ink:

Up to **67%**
Less waste per printed page using ink-subscription based model—like HP Instant Ink[1]

Instant Ink: subscription services enabled by IoT

Ensure users always have ink: improved recycling, massive waste reductions

Connected printers mean that:

- Customers can choose from different monthly service plans based on pages printed

- Ink replacement cartridges automatically delivered when printer is running low on ink

- Used cartridges returned to HP and fed directly into "closed loop" recycling program

- Enables customers to save up to 50% on ink

- Printers generate up to 67% less waste per printed page than conventional business models
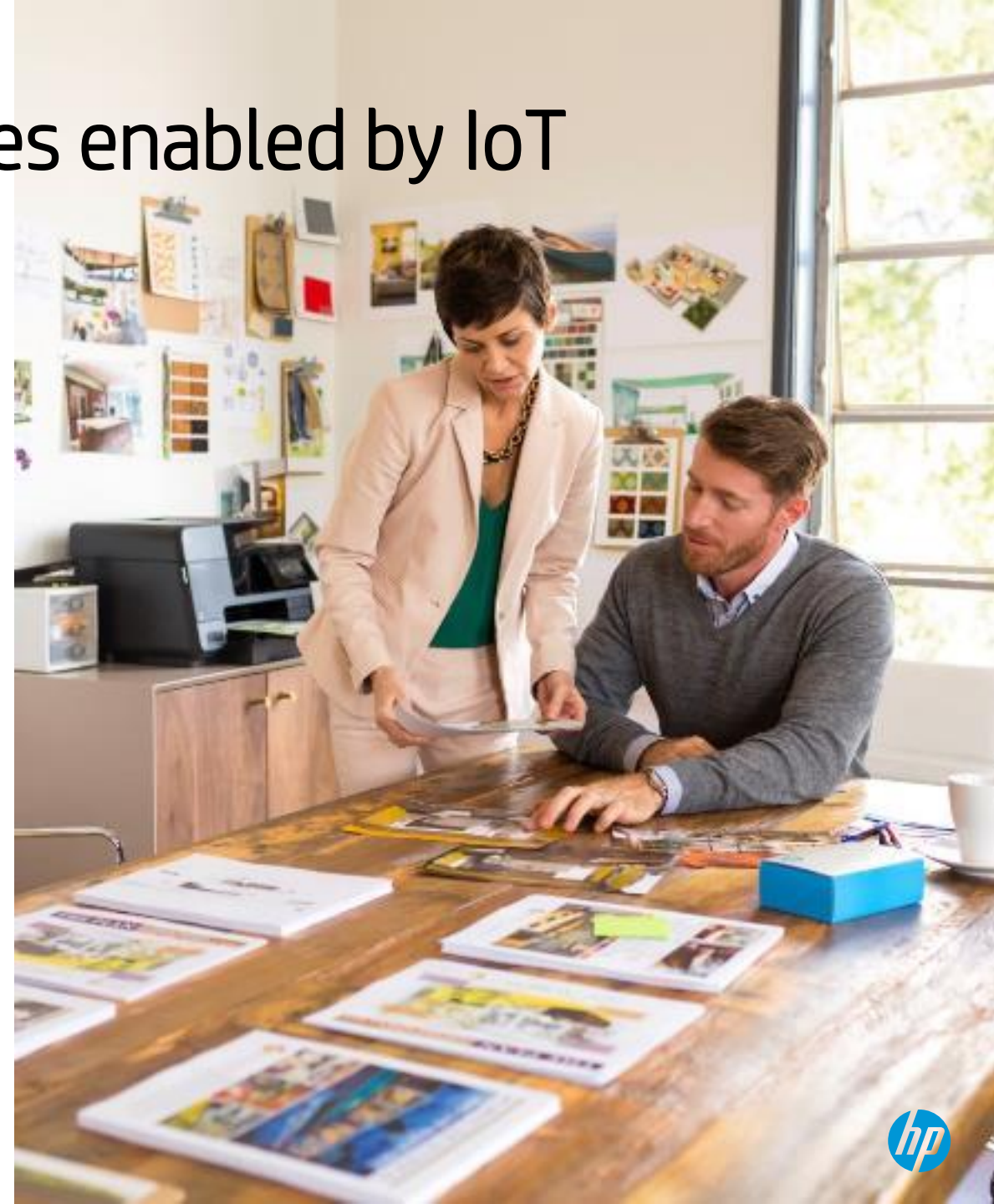
Pursuing a circular economy model future-proofs a company

- Improving its ability to predict its future and positioning it for further growth.
- Circularity is a <u>trigger for continuous innovation,</u> enabling a company to deepen its engagement with its business and customer base ahead of competitors.

19

What are the business benefits of a circular business model ?

Risk & cost reduction and increased revenues and profits through the following:

- Developing new markets and customer segments, retaining and growing existing ones
- Satisfying changing customer needs and expectations
- Saving your suppliers, business and customers money
- **Increasing security of supply and maintaining access to resources**
- Improving price stability and predictability of inputs
- Attracting, retaining and engaging employees – <u>and new partners</u>
- Building company brand and reputation
- Getting ahead of government and investor requirements

"The auto industry consumes about 15% to 20% of the global steel production, in 2004 the price of steel rose 60% in one year and did not significantly decline until 2008. Without circular economics sudden exposure to price fluctuations is a permanent condition of doing businesses."

Carlos Tavares, COO, Renault

Demand for all commodities is expected to rocket by 30% to 80% by 2030[1]

Replace wasted resources
$1,700
Billion

Monetize wasted capacity
$600
Billion
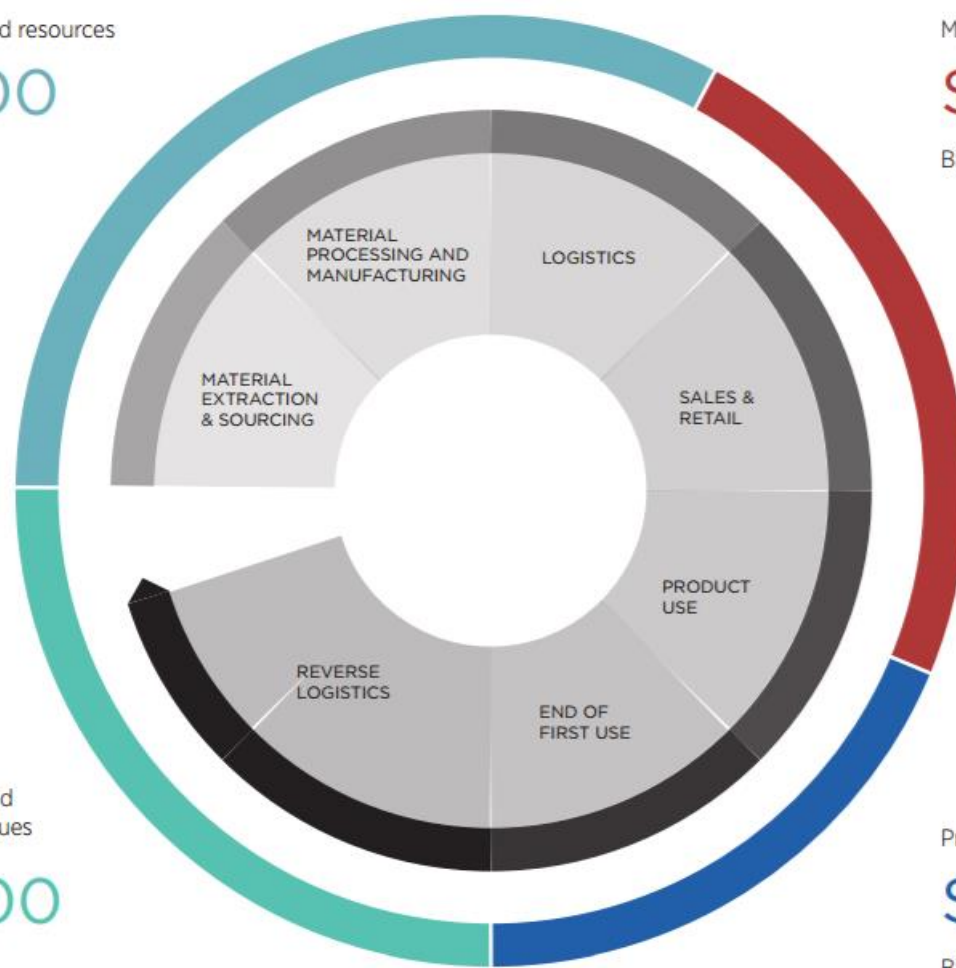
Recover wasted embedded values
$1,300
Billion

Prevent wasted lifecycles
$900
Billion

MATERIAL PROCESSING AND MANUFACTURING

LOGISTICS

MATERIAL EXTRACTION & SOURCING

SALES & RETAIL

REVERSE LOGISTICS

PRODUCT USE

END OF FIRST USE

REPLACE WASTED RESOURCES – materials and energy that cannot be continually regenerated, but are consumed and forever gone when used.

MONETIZE WASTED CAPACITY – products that sit idle unnecessarily.

PREVENT WASTED LIFECYCLES – products with artificially short working lives or that are disposed of even if there is still demand for them from other users.

RECOVER WASTED EMBEDDED VALUES – components, materials and energy that are not recovered from disposed products and put back into use.

Many believe that the circular economy, which de couples growth from resource consumption, is shaping the _next industrial revolution_

Accenture predicts this shift to equal $4.5 trillion globally by 2030 across 4 types of waste in the linear economy

What does that mean in practice?

Preventing waste through innovative business models or improved design either:

- For disassembly or
- Durability

Lengthening a product's life through enhanced re- use, repair or remanufacture

Improving end of life processing and resource recovery

A circular business makes greater use of its physical assets – prolongs their life and
draws more on renewable sources

What are some of the barriers to doing this?

Preventing waste through innovative business models or improved design either:

- For disassembly – does this make the product look or perform differently, does it increase cost?

- Durability - do customers look for this today?

- Lengthening a product's life through enhanced re- use, repair or remanufacture - what are some of the issues you can see here?

- Improving end of life processing and resource recovery– how do we do this as a competitive advantage?

**There is no one-size-fits-all circular solution.
Your approach will depend on a number of factors including:**

**- your business model,
- sector,
- value chain,
- available resources and location.**

**Start anywhere, but take a strategic
approach to selecting your options**.

A circular business model requires <u>everyone</u> involved in the product supply chain to become involved practically in 'stewarding' the materials used in the product, from "cradle to cradle"

Think of the barriers to this today........

HP closing the plastics loop

"HP's use of recycled plastic in an application as technically demanding as their inkjet cartridges represents an unprecedented engineering innovation."

Larry Koester
VP Communications, Environmental Division
Society of Plastics Engineers

HP in action: closed loop recycling program

Manufacturing new cartridges using returned cartridges and other plastics contributes to circular economy

1 million

In past five years, HP has helped divert on average more than **1 million bottles per day**

33% smaller

Recycled plastic has **up to a 33% smaller footprint** than virgin plastic

CO_2

54%

75%

Process enables HP to reduce fossil fuel consumption by 54% and water consumption by 75%

3 billion
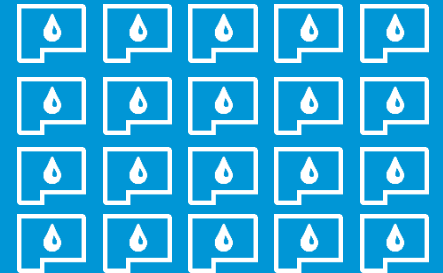
More than 3 **billion cartridges** produced using 3.3 billion bottles and 50 million apparel hangers

hp

Closed-loop recycled plastic progression

Leveraging knowledge and extending leadership

- Recycled PET (rPET)
  - Five year development
  - Implemented 2005

Wave 1: rPET

- Recycled polypropylene (rPP)
  - Three year development
  - Implemented 2013

Wave 2: rPP

- Recycled high impact polypropylene (r2P2)
  - Less than 12 months development
  - Implementation began 2014

Wave 3: r2P2
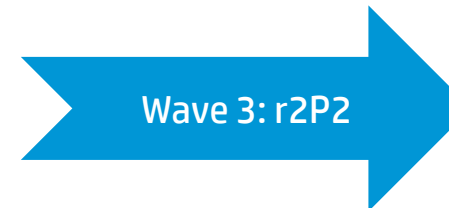
HP Planet Partners

Partnering for the planet for more than 25 years

Since 1987, HP has recovered more than

3.3 billion

pounds of products...

...equaling the weight of more than

8 thousand

blue whales (1 whale : 410,000 pounds)

---

3 billion new cartridges made with recycled content

80% of Inkjet cartridges have recycled content

100% of Toner cartridges have recycled content

HP Planet Partners

For more than 25 years, we've been making a difference, together.

682 million
recycled HP cartridges from 60 countries

3.3 billion
recycled plastic bottles

50 million
recycled hangers

Enough to wrap around the world 12 times
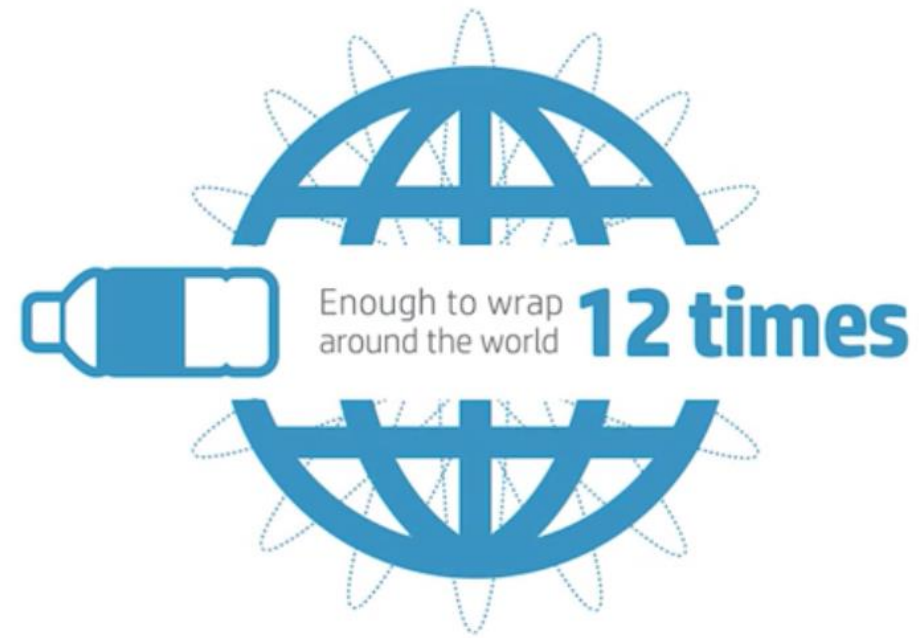
Keys to HP's "closed loop" recycling success
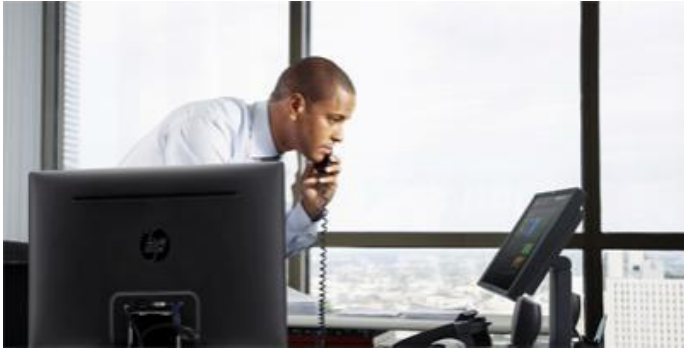
Innovation in recycling and RCP solutions

With no precedent or roadmap, creativity and invention essential

Partnering with innovative suppliers

Collaboration with partners leveraged core competencies

Patience and persistence through development process

Management provided team time and resources for success

break

What examples do you know of the circular economy today?

Recovery and Recycling – materials and energy

Organic

Enterra - Black soldier fly larvae turns recycled food products into ingredients for fish and poultry feedstock

Technical

Novelis - Increasing recycled aluminum from 30% in 2007 to 80% by 2020

What examples do you know of the circular economy today?

Uber, Bixi Bikes, Car 2 Go, Airbnb, tool libraries

- Rent Frock repeat: an online dress rental service, uses a mail-back service to facilitate formal dress rental across Canada.

- Mud Jeans, a Dutch denim company, are pioneering a leasing model for jeans which is also nurturing a long-term relationship with the customer. The user benefits from use of the jeans but the company retains ownership of the raw materials, getting the jeans back for reuse and recycling via mail-back using RePack - a returnable and reusable packaging solution.

- PureBond® Plywood, manufactured by Columbia Forest Products, uses a chemical-free adhesive inspired by the way mussels adhere to rocks. This innovative alternative replaces urea formaldehyde resin – a chemical that is typically used to treat wood but that also limits post-use composting and recovery. By using chemical-free wood today, a wood waste problem is being avoided in the future.

- Kingfisher brought together its production, manufacturing, retail and logistics expertise into one team with a chemistry research centre, waste recycler and composite wood manufacturer to create a new engineering process called "ReMade". This helped them develop a composite material out of waste wood from their stores and end-of-life products for new kitchen and bathroom counters. This product is 30% lighter than similar products and is easier to handle and install, reducing breakages. The worktop's wood composite structure is more water resistant than traditional particle boards which are often damaged by steam and surface water. By replacing the use of virgin source material and harmful chemicals, the new engineering also reduces the product's carbon footprint and preserves natural resources.

What do we need to change to move to a circular economy

- More renewable generation

- Price signals & regulations that change incentives

- Buyers that look for value differently

- Services that meet customer needs and circular motions

- Education?

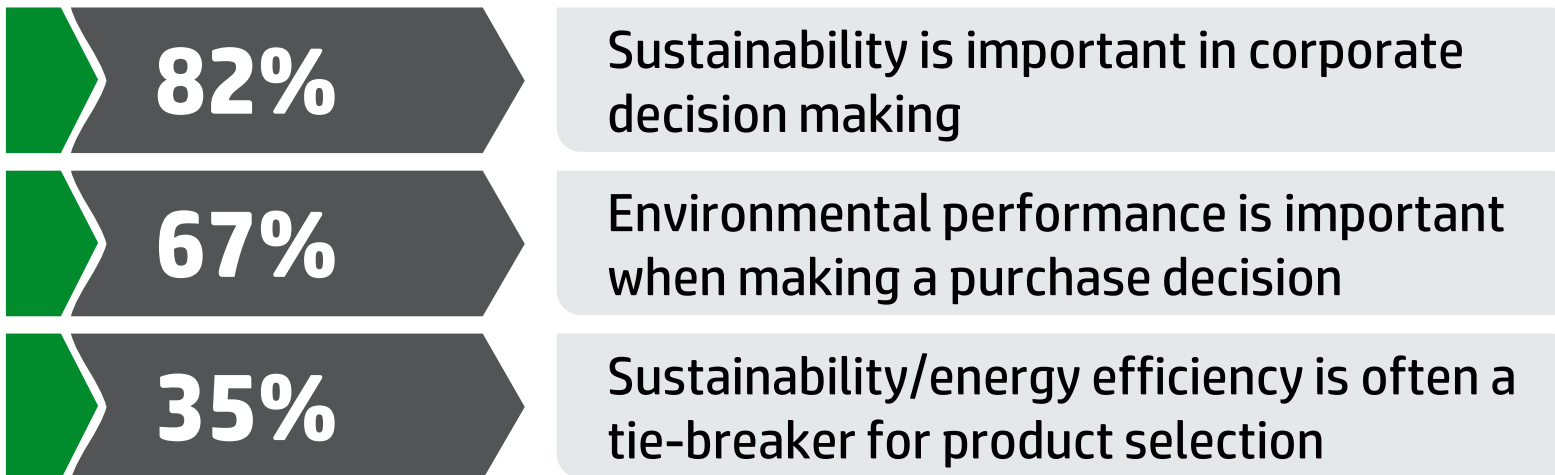- New Legislation in Ontario came into effect in 2016 : Waste Free Ontario Act.

Additionally within 90 days:
- Ministry of the Environment and Climate Change (MOECC) is required to publish *Waste-Free Ontario: Building a Circular Economy* for further consultation prior to finalizing it. The proposed strategy will address comments received on the draft version posted November 2015. The strategy, once finalized, will serve as a roadmap to shift Ontario toward a circular economy.

- The MOECC will post to the Environmental Registry a draft Transitional Operating Agreement between the Minister and the Authority, and invite comments from stakeholders.

Did you know that ...

Customers make purchasing decisions with the environment in mind?

% Business customers say:

82%	Sustainability is important in corporate decision making
67%	Environmental performance is important when making a purchase decision
35%	Sustainability/energy efficiency is often a tie-breaker for product selection

Source: Shelton Group US B2B Pulse, 2015

Is procurement a quick fix for the adoption of circular business models

Think of some of the issues

Sustainability at HP

Reinventing how we make, use, and regenerate amazing technology...

...helping businesses, communities, and individuals thrive.

"the real reason HP exists is to make a difference"

hp keep reinventing

Creating Circular Economies: sustainability in action

From ⟶ To

Take   Make   Discard

HP parts manufacturing ← Materials recovery and reuse

HP product manufacturing ← Reuse/refurbishment

HP services ← Product-as-a-service

Maintenance/upgrade model

Use

3D printing as a CE enabler
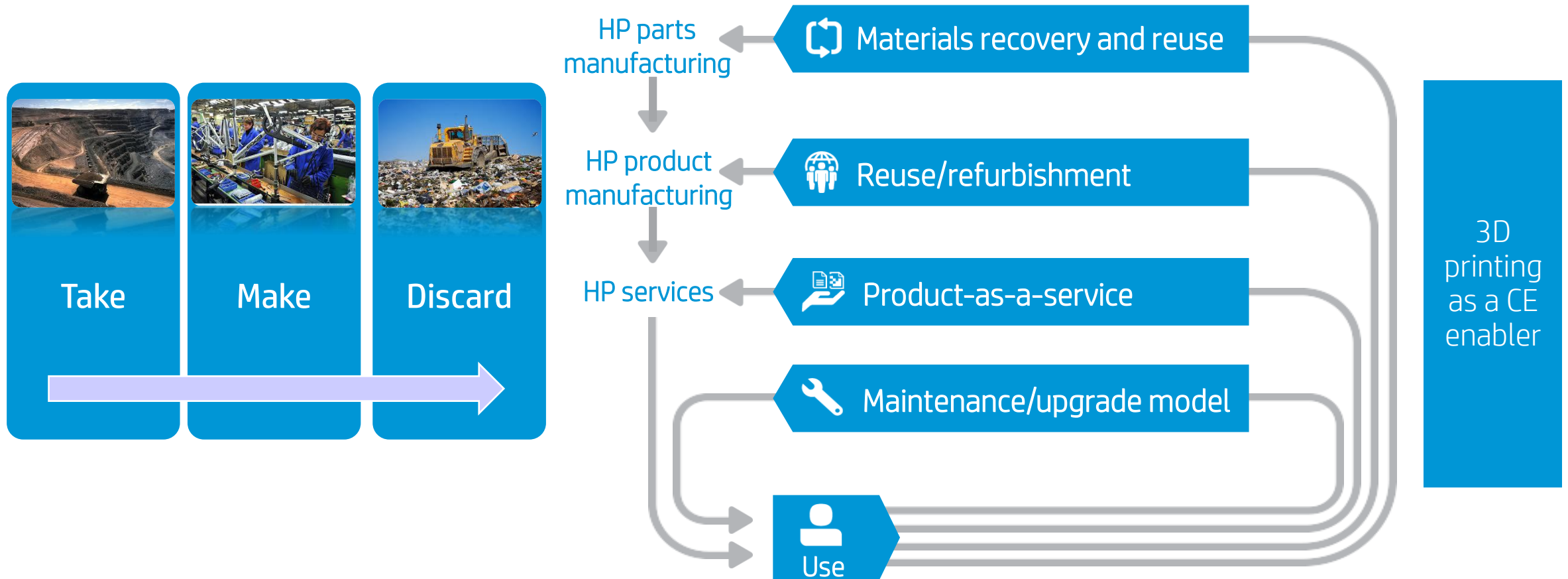
So what does this look like today?
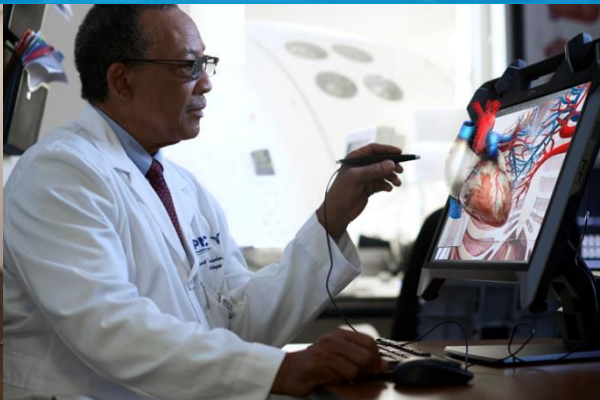
HP Elite x3
Designed with the environment in mind

Mobility
Durability
Repairability

HP Elite x3: The one device that's every device!

Is this the future of the desktop?

-ZDNet

Compared with a traditional work solution, an x3 solution uses up to 56% less material!

Let's
go in
circles

Propelling a more circular economy

Closed-loop processes
improve product end-of-life options

Service-based models
reduce product footprints

3D printing will dematerialize and
democratize how the world creates
and delivers goods and services

HP's Product Take Back and Recycling Program: Planet Partners

Trade in → Commercial Reuse

Donation → Social Reuse

Recycling → Materials Reuse

39 million units
and accessories refurbished for reuse since 2003
(41,000 tonnes in 2015)

1.7 million tons
of electronic products and supplies recovered since 1987
(114,000 tonnes in 2015)

Products as a service

HP Managed Print Services

- Creates and deploys enterprise-wide print and workflow strategies

- Up to 40% energy savings

- Save up to 30% in printing costs

- Reduce paper waste by millions of pages

- HP has ~1 million printers currently in MPS

- At end of lease: 74% are refurbished/resold, 26% recycled
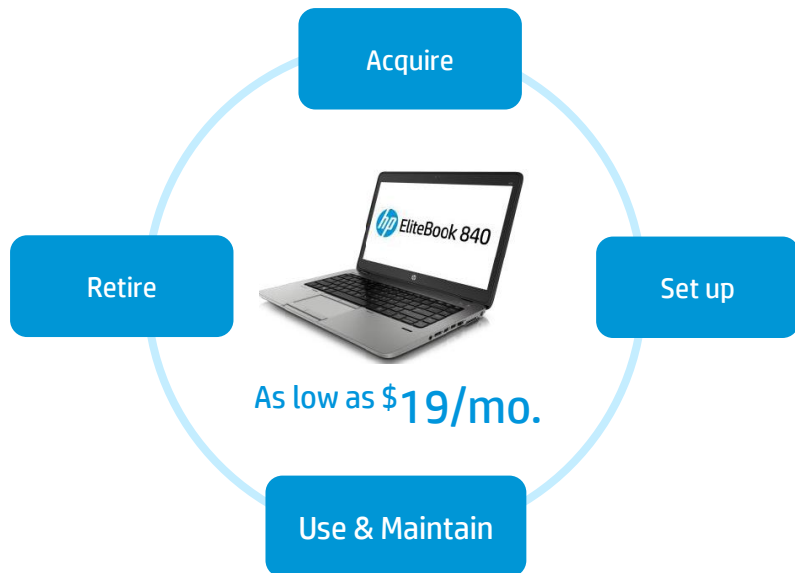
Device as a Service for SMBs

Acquire

Retire

Set up

Use & Maintain

EliteBook 840

As low as $19/mo.

Launched in June 2014 for micro/small businesses

Product simplicity:
- Subscription is simpler than subscribing to components separately

Product affordability:
- Subscription is cheaper or equal than buying the PC upfront

Up-to-date technology:
- Includes the latest products from HP (hardware, software and service)

HP Managed Print Services

Helps organizations create and deploy print and workflow strategies

Typical reductions in energy usage up to 40%

Saves up to 30% in imaging and printing costs

Reduces paper waste of 25% or more
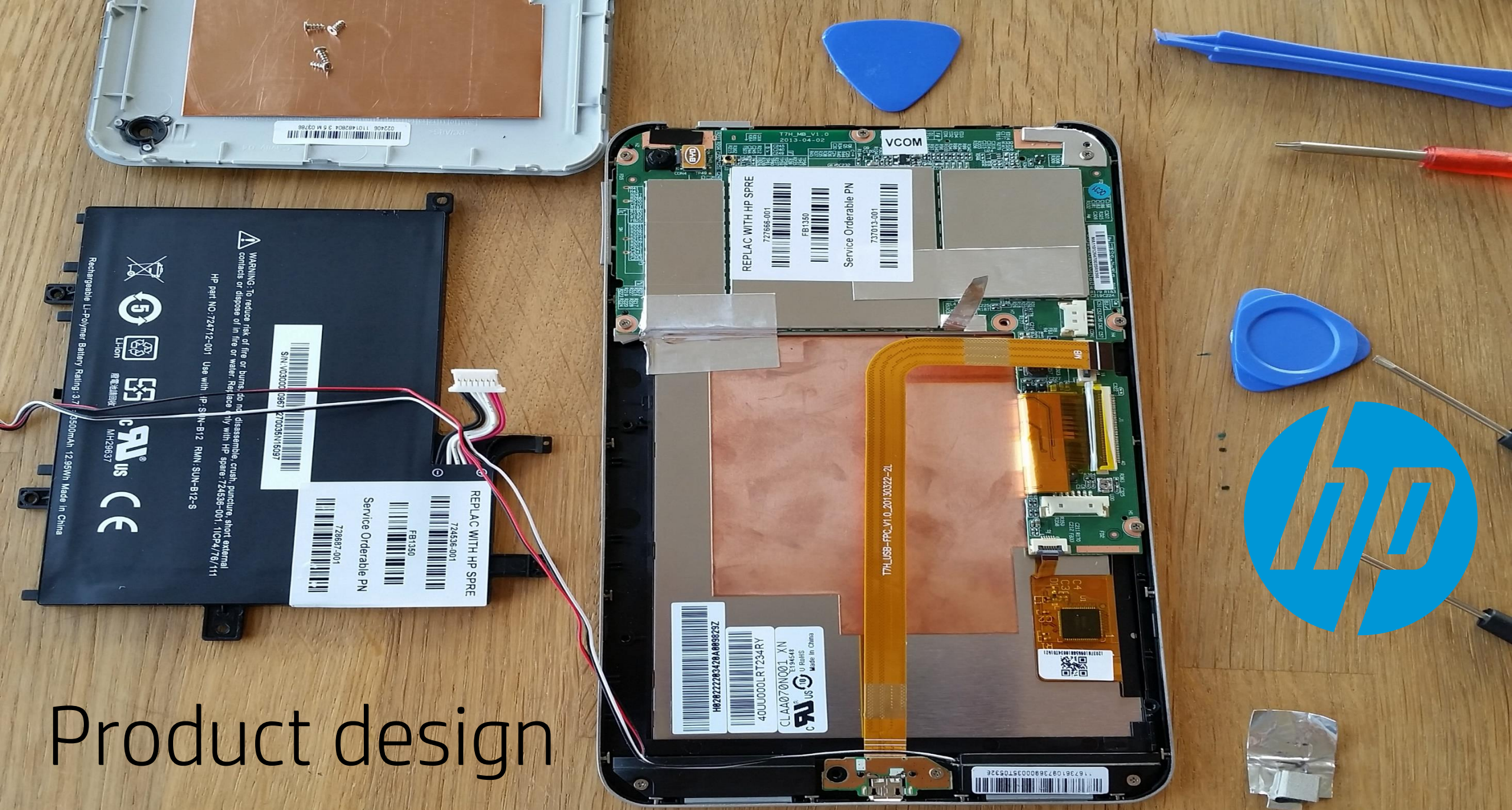
hp
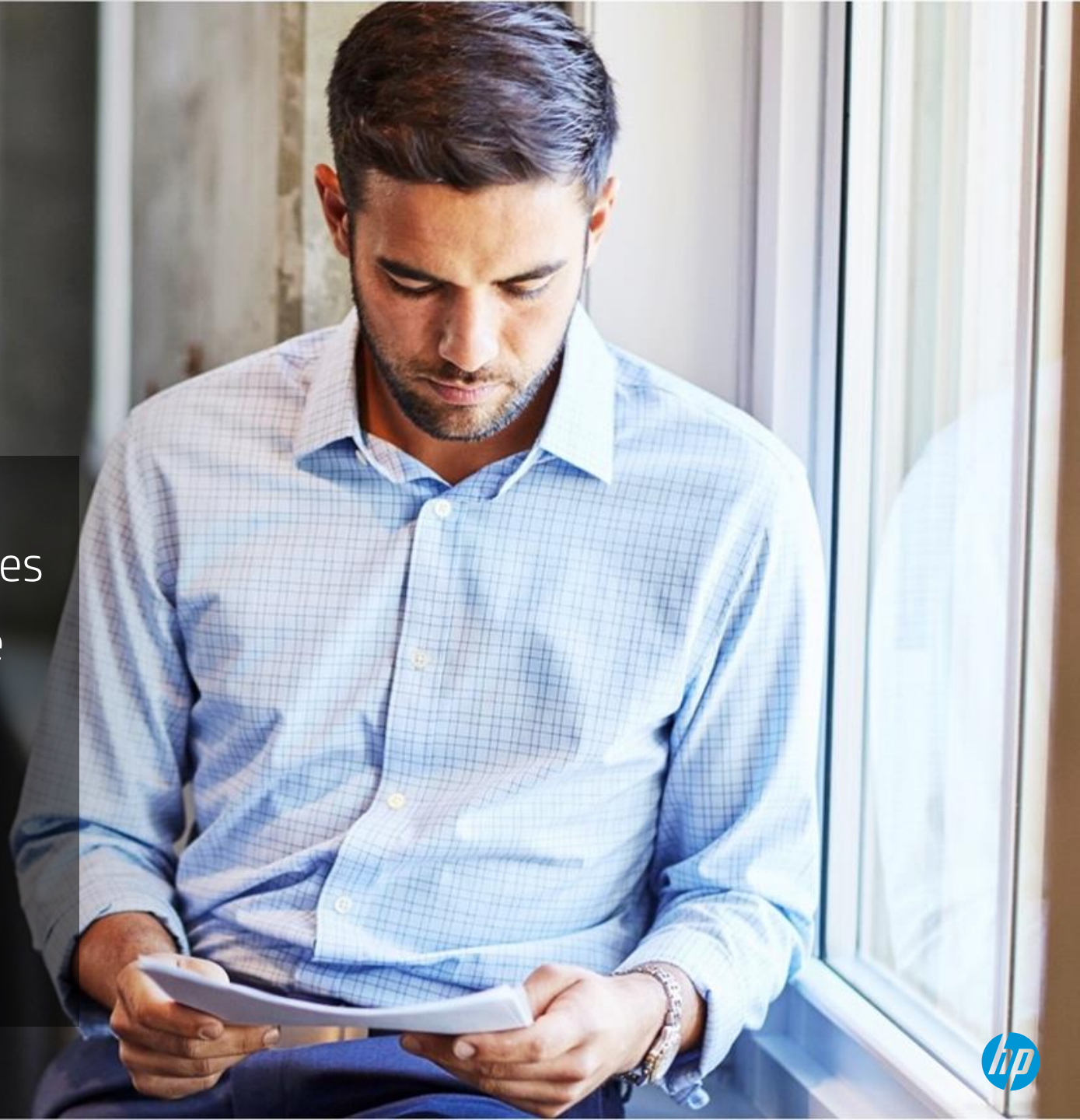
HP PageWide technology

Uses at least 98% less energy while printing than lasers in its class

Reduces carbon footprint of printing up to 52% per printer

Generates up to 95% less supplies and packaging waste than comparable laser printers

Product design

Design for repairability: don't take our word for it.....

HP Elite x2 1012 G1 Repairability Score:

10 out of 10 (10 is the easiest to repair):

- ✓ Except for a minor amount of tape over the sensor array, there is no adhesive.
- ✓ All screws are standard T6 Torx or Phillips #0.
- ✓ Easy access to repair documentation and replacement parts by HP makes self-repair more feasible.
- ✓ A modular and flat overall construction allows access to most components without a lengthy disassembly process.

IFIXIT

HP LaserJet 1100 Printer

Warranty status: **Unspecified** ℹ
Check warranty status

Change product ▾

Drivers & software

Help

! Not the product you are looking for? If you cannot find your product on this site, go to HP Support Center - Hewlett Packard Enterprise ↗ .

Select driver language and OS

Driver language

English ▾

Knowledge base options

Search HP Support Center

Top issues

Most viewed solutions

Advisories, bulletins & notices

Manuals

Troubleshoot a problem

Setup & install

Learn & use

Perform maintenance

Upgrade & migrate

Operating systems in English

Microsoft Windows 7 (64-bit) ▾

How can I tell if my Windows operating system is 32-bit or 64-bit?

Microsoft Windows 7 (64-bit) Downloads

These downloads are available for customers according to the terms in the HP Software License Agreement. Certain software may require a valid warranty, current support contract with HP, or a license fee.

By downloading, you agree to the terms and conditions of the HP Software License Agreement.

Subscribe to driver and support alerts

Sign up now for customized driver, security, patch, and support email alerts.

Related links

Windows 10 support

Windows 8/8.1 support

[+] [−]

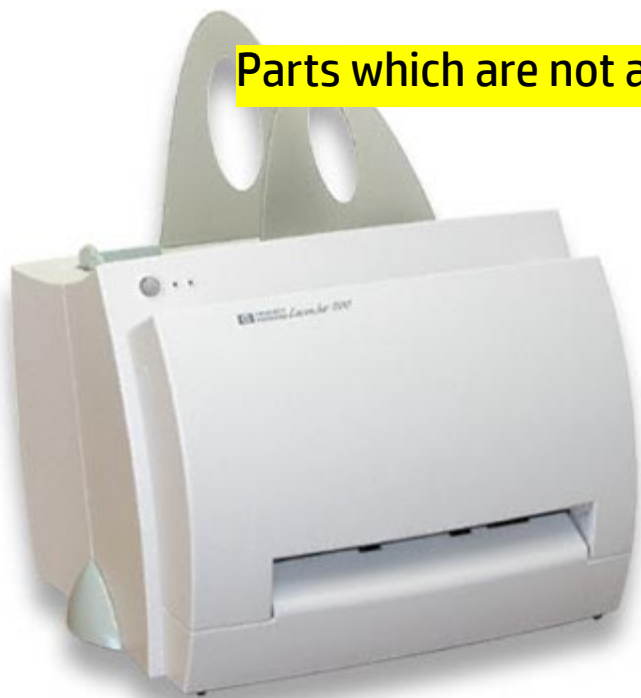Print cartridge for HP 2225A introduced in 1984, still produced today

the **PRINTER WORKS**

Most-Wanted Parts for HP LaserJets

HP LaserJet 1100 Series

Search

previous page ||| next page ||| go back to Main Selection Page

Parts which are not available at HP can be purchased on the market

Go to **LaserJet 1100 Parts Catalog**

Go to **LaserJet 1100 Data Sheet**

Click part numbers in table below to check price & availability or order, click images for photo pages, diagram links for diagrams

Printer Name	Model Number	PPM (max)	DPI	Monthly Duty Cycle	Duplex	Envelope Feeder	Hard Disk	Engine
HP LaserJet 1100/ 1100xi/ 1100xi	C4224A / C4225A / C4226A	8	600	7,000	No	No	No	1100

Modular Design = Upgradability

F2A01A
HP Stapler/Stacker- 50
Sheet Stapler

HP Punch Unit*

F2A11A
HP Paper Pass
Output Module

F2A55A
HP Fax Expansion Kit

F2A06A
HP Exit Tray Fax
Unit

F1Z69A
HP Long Paper Feed
Tray

F2A03A
HP Saddle Stitch Finisher-
50 Sheet Stapler

F2A07A
HP Exit Tray
Cabinet

F1Z95A
HP Multi Bypass 100
Sheet Tray

HP Punch Module**

F2A20A
HP Paper Pass Output
Relay Unit

F2A10A
HP Inserter- 400
Sheet

F1J62A
HP Color MFP S970dn

F1Z98A
HP Large Capacity 3500
Sheet Tray

F2A02A
HP Stapler/Stacker- 100
Sheet Stapler

F1Z97A
HP Large Capacity 3000
Sheet Tray

HP Punch Module**

F1Z96A
HP Multi Bypass 500
Sheet Tray

F2A04A
HP Saddle Stitch Finisher-
100 Sheet Stapler

F2A05A
HP Curl
Correction Unit

F2A08A
HP Trimmer Unit

F2A09A
HP Folding Unit

F2A00A
HP Paper Pass 5000 Sheet
Tray Input Unit

F1Z99A
HP Large Capacity 5000
Sheet Tray

Circular economy connections

Enable replacement ✓

Product Upgrade ✓

Increase product
Lifetime ✓

Easier Maintenance ✓

Recycling ✓

= improved materials intensity
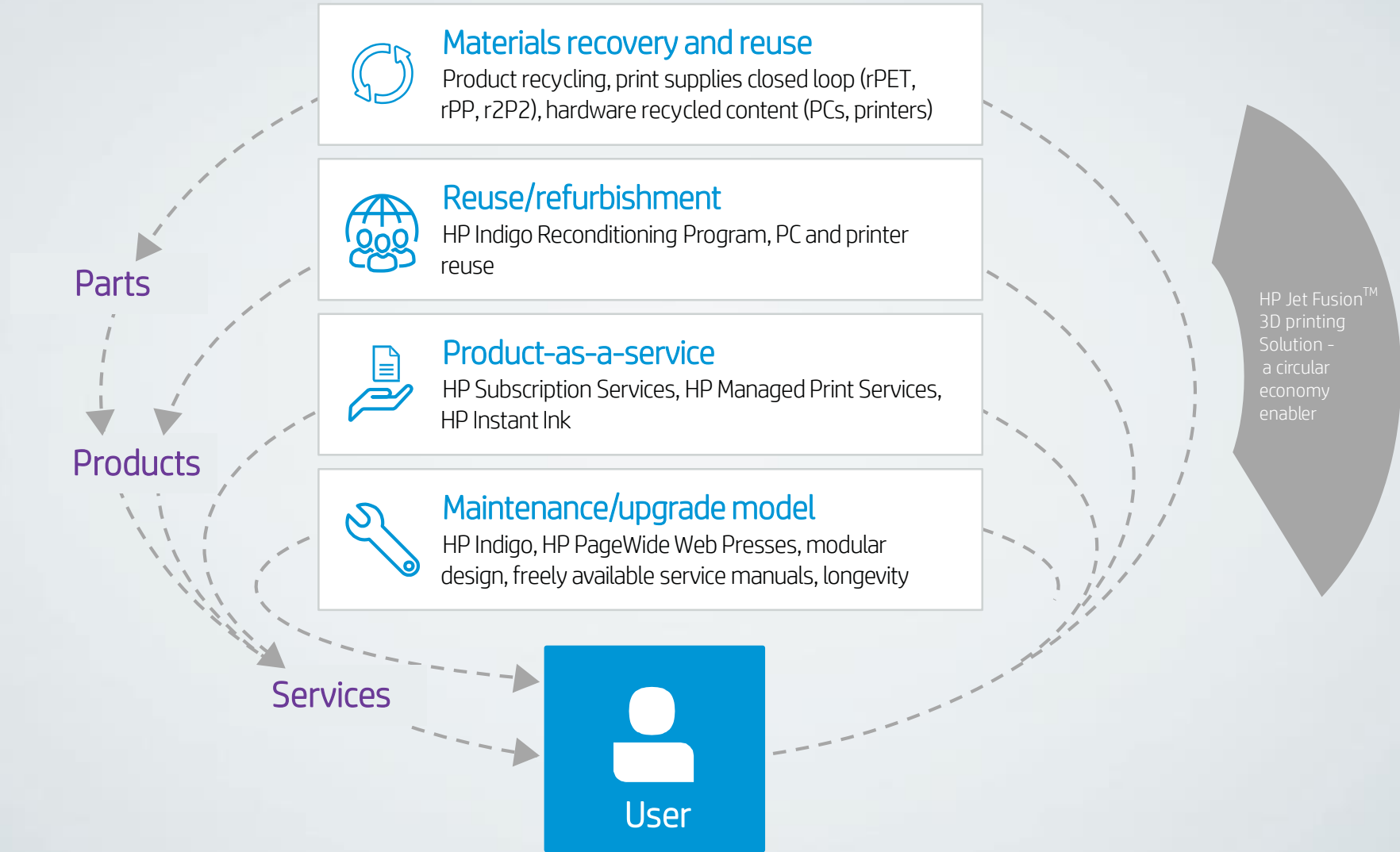18% better 2014-2015

Digital Print Manufacturing

HP Inkjet High Speed Printing Systems
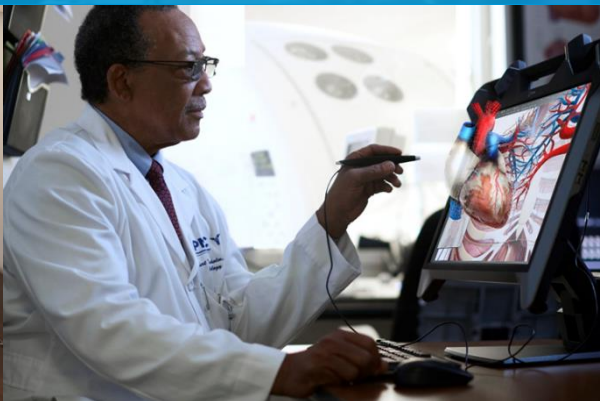
No *known* end-of-life: totally field upgradeable

HP's circular economy

Materials recovery and reuse
Product recycling, print supplies closed loop (rPET, rPP, r2P2), hardware recycled content (PCs, printers)

Reuse/refurbishment
HP Indigo Reconditioning Program, PC and printer reuse

Product-as-a-service
HP Subscription Services, HP Managed Print Services, HP Instant Ink

Maintenance/upgrade model
HP Indigo, HP PageWide Web Presses, modular design, freely available service manuals, longevity

Parts

Products

Services

User

HP Jet Fusion™ 3D printing Solution - a circular economy enabler

So what does this look like tomorrow?

Disruptive Technology – 3D Printing

HP Jet Fusion ™

1	Speed
2	Quality
3	Economics

3D printing

Will change humanity's footprint by reducing carbon emissions

Can help eliminate waste and extend product lifecycles

Can democratize how the world designs and delivers goods and services, spurring local economic development

Will enable design of solutions for specific social and human ills
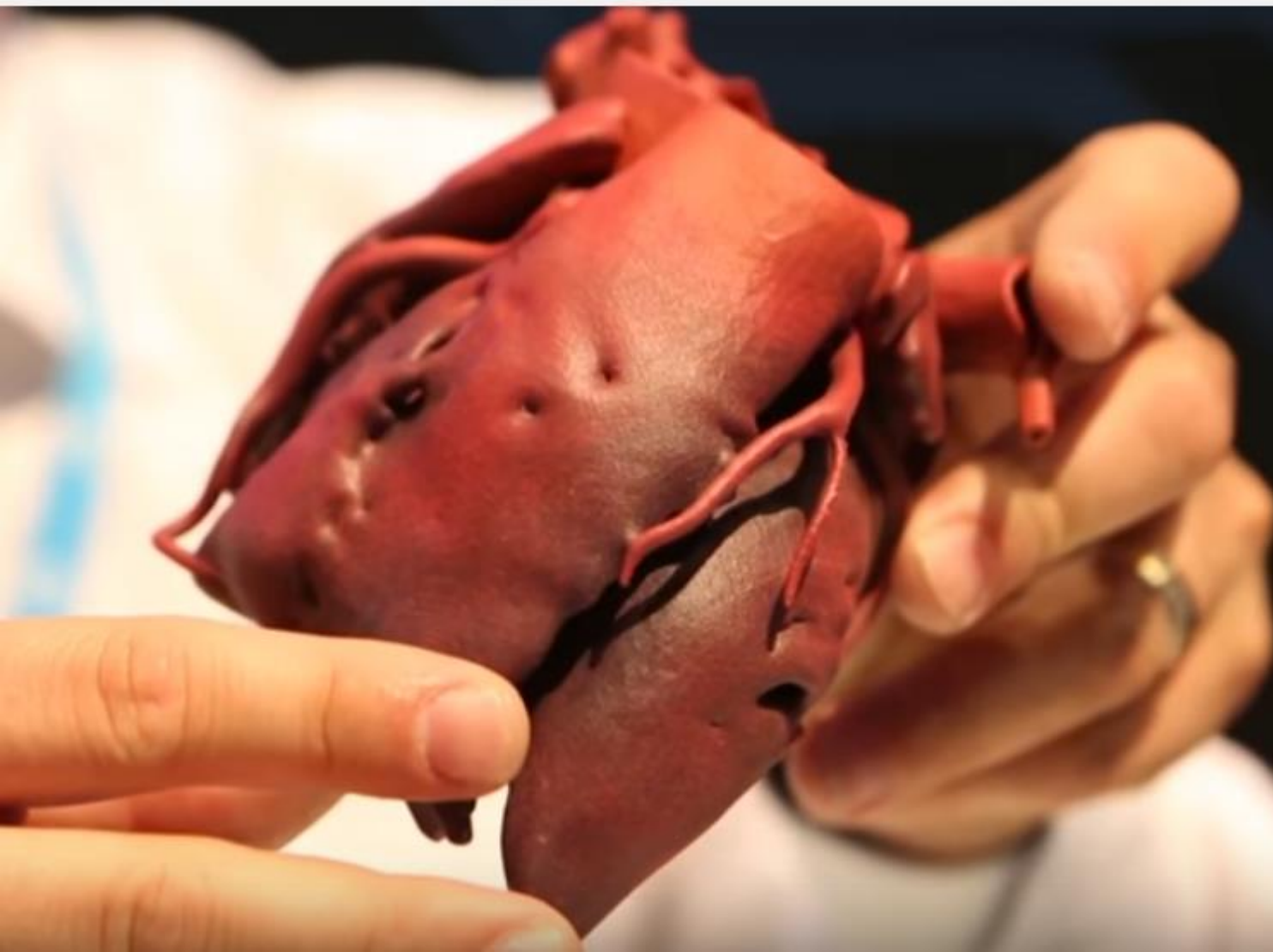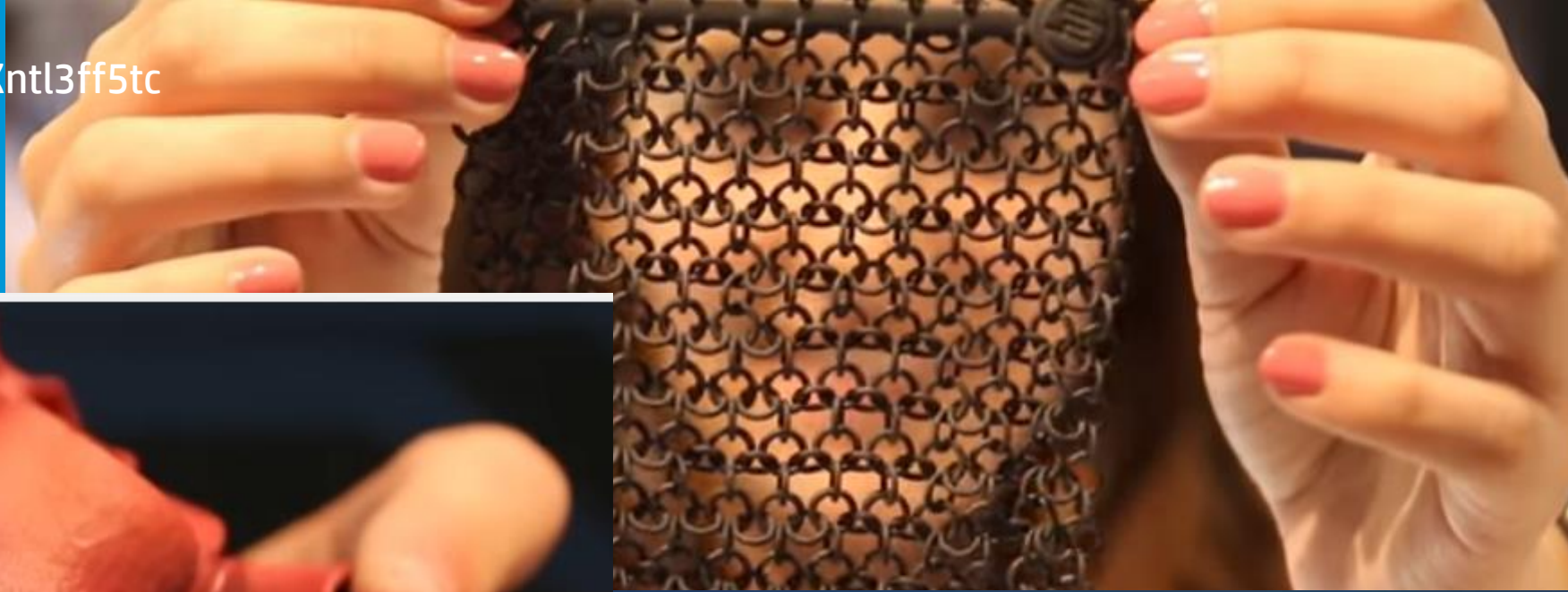
Improving patient care

3D system provides new way to examine and dissect images of patient-specific anatomy

Users view and interact with images as if they were real physical objects

Helps doctors identify overlooked issues and speed up diagnoses

Rethinking supply chains

What if we could 3D print our spare parts?
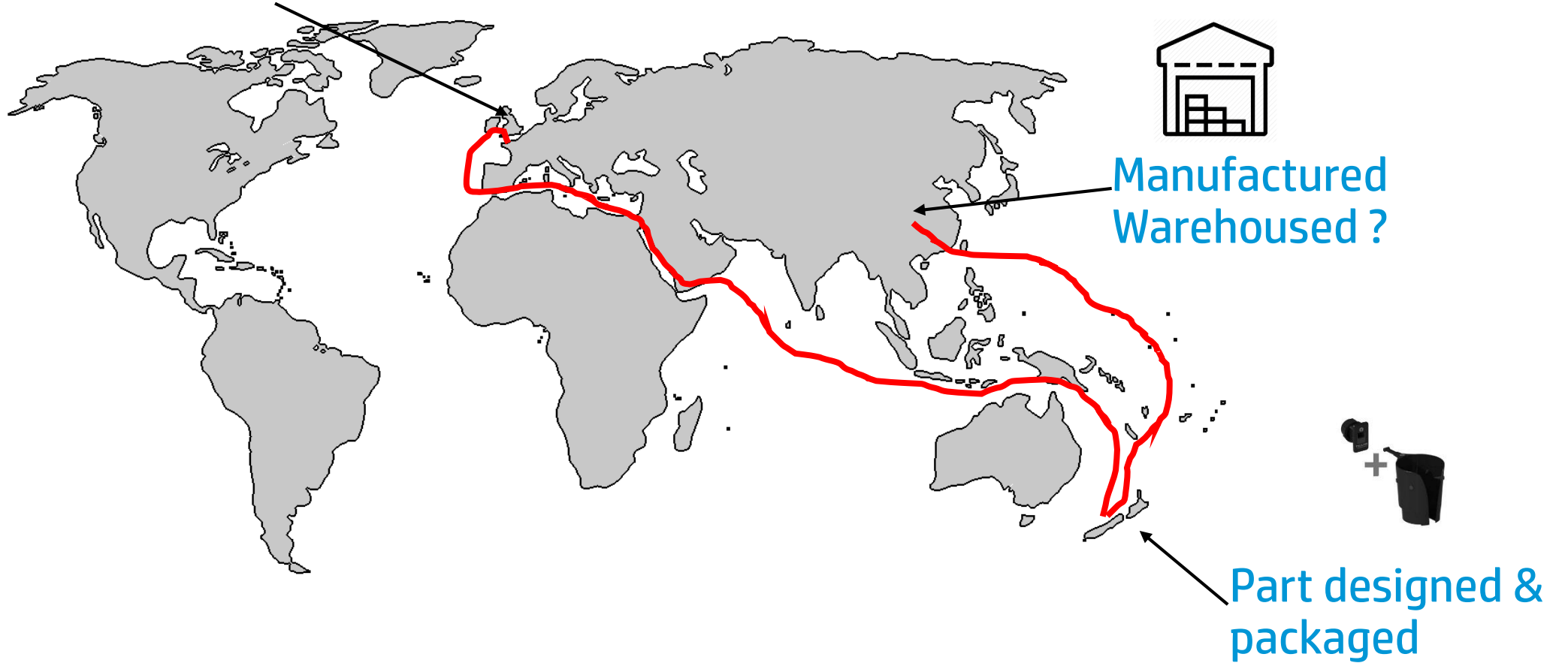
3D Printing will reinvent manufacturing

3D Printing will reinvent supply chains
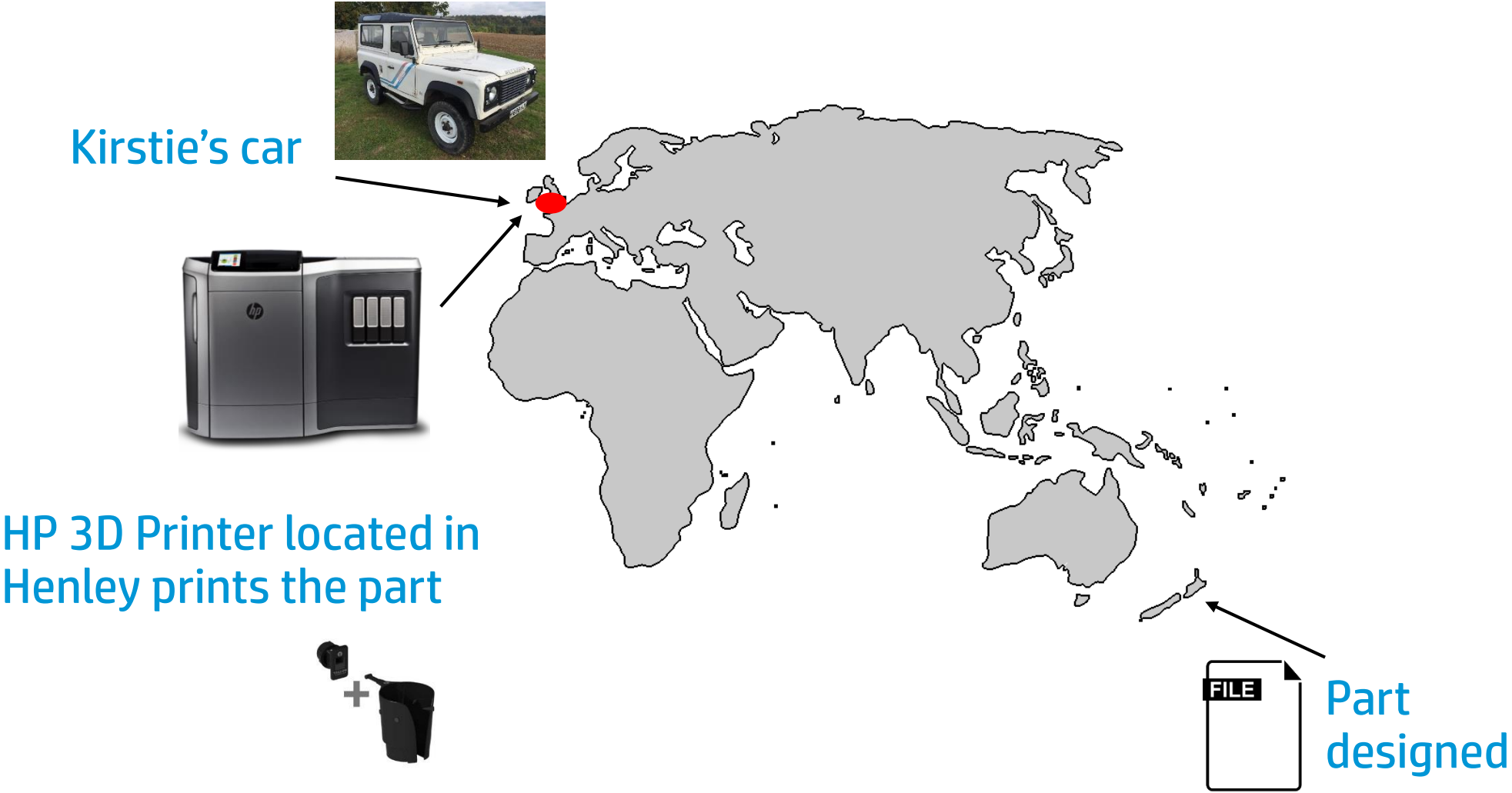
Case study: Automotive industry

How it works today

Kirstie's car

Manufactured
Warehoused ?

Part designed &
packaged

3D Printing can save energy, eliminate waste, and reduce carbon footprints

Kirstie's car

HP 3D Printer located in Henley prints the part

FILE

Part designed

The challenge of repair

Today's repair industry is frustrating for both manufacturers and consumers:

- To enable repair, manufacturers need to hold stock of a wide range of parts. This is expensive and resource intensive. As a result they can only support a limited range of products.

- For consumers, spare parts are expensive, slow to get hold of or not available at all.

- This results in many products being thrown away when they simply needed a replacement part.

"23% of waste electrical equipment collected at recycling centres could be re-used with a small amount of repair"

Wrap 2011

Rethinking repair – keep products out of the trash and in use longer

3D allows manufacturing on demand of an infinite inventory of spares, electronically

"We are no longer able to supply spare parts, or carry out service or repairs for several models."
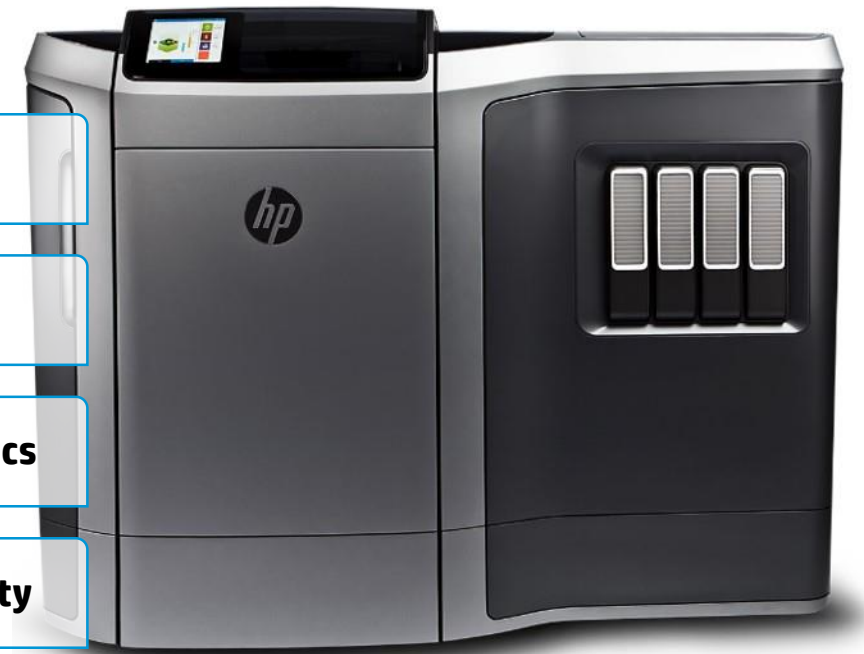
eSpares.com carries over 9600 different oven knobs!

3D printing and HP MultiJet Fusion™ Technology

Breakthrough innovation will transform supply chains and industries

- Additive manufacturing enables unique structural designs with **no manufacturing waste**

- Enable new part/service **supply chains for other industries**

- Exact **supply and demand matching** delivers ability to economically produce small quantities

- Analogy to digital print manufacturing with customized product options that **reduce waste**

1	Speed
2	Quality
3	Economics
4	Reliability

Resources

Toolkit:
http://www.nzwc.ca/focus/circular-economy/toolkit/Pages/default.aspx

Case studies: http://www.nzwc.ca/focus/circular-economy/case-studies/Pages/default.aspx

What is the circular economy?
Why are we seeing a shift?
How do we embrace it in our organization?

National Zero Waste Council
Circular Economy Business
Tool Kit

Steps to Starting
Your Circular
Journey

zeroWASTE
NATIONAL ZERO WASTE COUNCIL

Sustainable IT Purchasing Guide

Free resource helps customers make socially and environmentally sound purchasing decisions

Provides the latest energy efficiency requirements from around the globe

Features data on resource and packaging minimization

http://h20195.www2.hp.com/V2/GetPDF.aspx/c03844101.pdf

Carbon Footprint Calculators

Free tools help estimate energy use, cost, and carbon impact of PCs and printers

Data enables more informed purchasing decisions

Better understand resource tradeoffs of different form-factors, features, and capabilities

www.hp.com/go/carbonfootprint

HP's Journey to become
Canada's most environmentally responsible IT company

2016 CANADA'S GREENEST EMPLOYERS — Only PC company listed on the **Canada's Greenest Employers** List in 2016.

HP Planet Partners, our return & recycling program turns 25 years old in 2016

Numerous awards at the **Environmental Print Awards**

Only IT company globally **to disclose our full carbon footprint** with reduction goals in all areas of the value chain. Published in 2014.

Clean 16 — Only IT company to win 2 **Clean 16** awards for leadership and 3 **Top Projects** awards for contributions to clean capitalism.

Clean 50 TOP 15 PROJECT

Won an award for how we manage our corporate grounds: **The Greening Corporate Grounds** program with Credit Valley Conservation celebrates ecological landscaping and education.

HP's Global Operations pledged to use **100% renewable electricity.** Joined **RE100**, a global collaboration of companies leading this effort.

RE 100

Member of CE100, a program that is accelerating the transition to a circular economy.

CE100

We have the most **comprehensive environmental education program** in Canada's IT industry- spanning from Kindergarten to companies that aren't even our customers.

MEMBER OF Dow Jones Sustainability Indices In Collaboration with RobecoSAM — HP named to **Dow Jones Sustainability** World Index and North America Index in 2015.

For a multi-year view of the highlights of our achievements see the **Environmental Citizenship Milestones Document** on hp.ca/environment

HP ships 100% of our products in North America using SmartWay-approved road transportation carriers.
(U.S. EPA. SmartWay trucks consume about 18% less fuel than conventional class 8 freight trucks).

1st to publish a complete carbon and water footprint

1st to publish supply chain responsibility code of conduct and industry-leading standards

Voted **most trusted technology company** by consumers (Ponemon Institute, 2015)
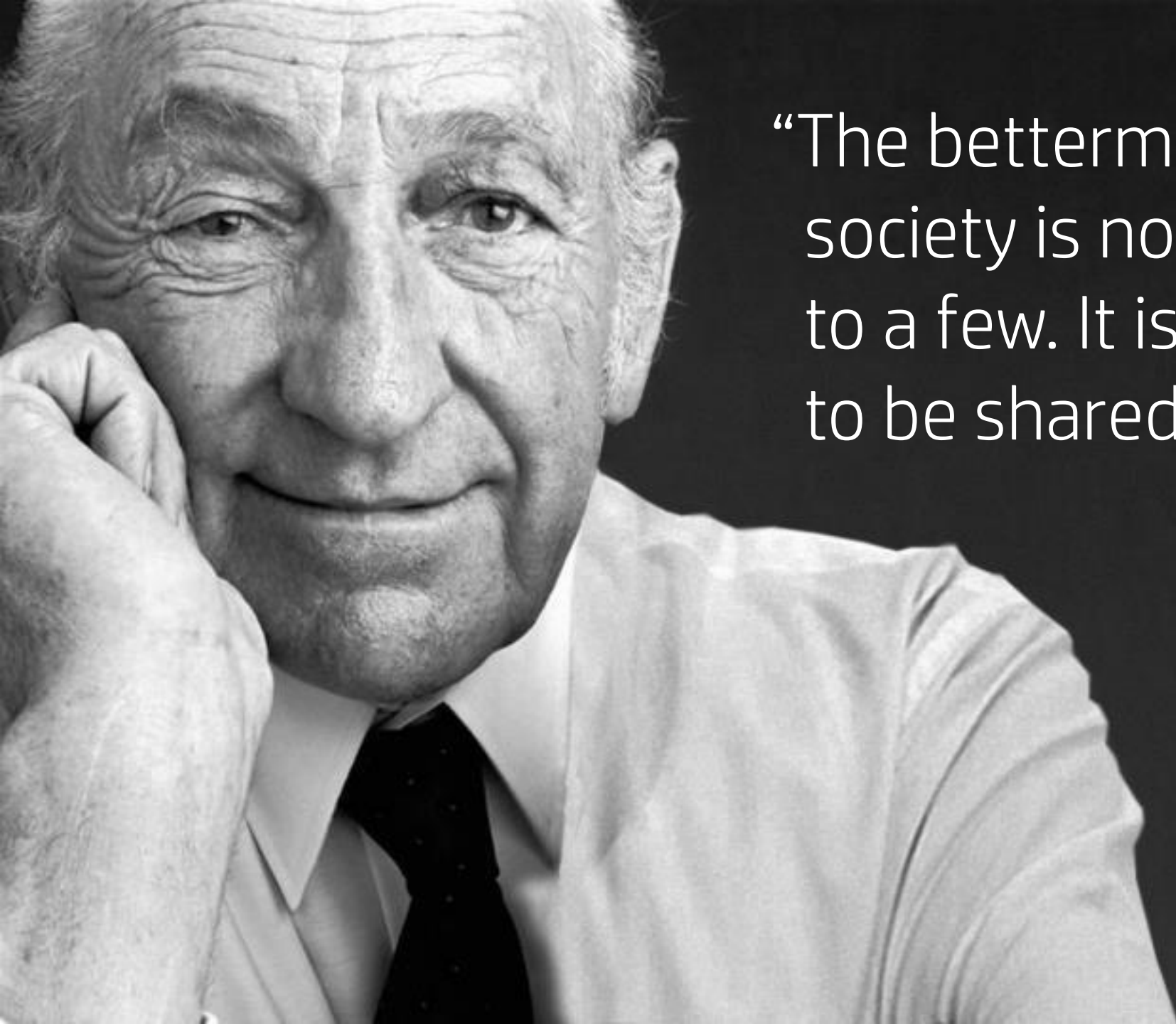
HP in action

Sustainability is core to our vision of making life better...

Named to **DJSI World Index, FSTE4Good,** and **CDP Climate A lists**

Commits to achieving100% renewable electricity usage in global operations

Recycles 1 million bottles per day for new HP inkjet cartridges

"The betterment of our society is not a job to be left to a few. It is a responsibility to be shared by all."

- Dave Packard

Backup slides (optional)

Hewlett-Packard Company's global water footprint in FY15

27% Supply chain

7% Operations

Products
and solutions

66%
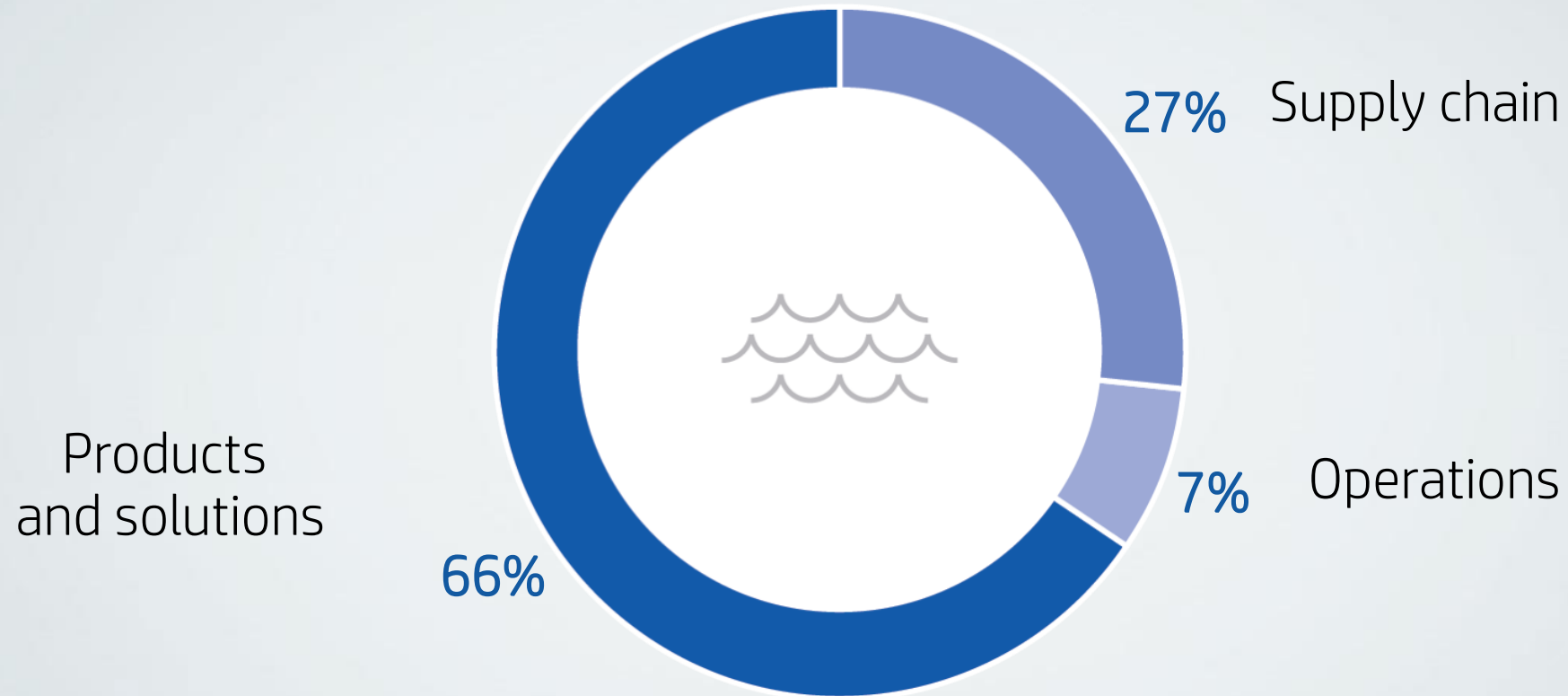
Full circle innovation

Developing material and energy-efficient products

Reducing cost, waste, and environmental impact

Providing closed loop recycling

Recognized as one of the world's most sustainable companies

Named to "Climate A List" in CDP 2015 Global Climate Change Report and S&P 500 Climate Disclosure Leadership Index, and to 2016 Supplier A List

Received three 2014 awards, including one for overall environmental sustainability

Recognized as a top U.S. company for contributions to communities in 2013 and 2014

Listed on both World Index (2012-2015) and North America Index (2011-2015)

Received Excellence Award for fourth time

Received 100% on Corporate Equality Index for 2003-2015

Included on the FTSE4Good Index since 2003

Awarded 2014 Corporate Citizenship Award

Named one of Canada's Greenest Employers for ninth year in a row

Won 2014 award for Innovation in Collaboration

Named one of Brazil's most sustainable companies in 2013 and 2014

Honored with Tribute Award for volunteering and service to communities

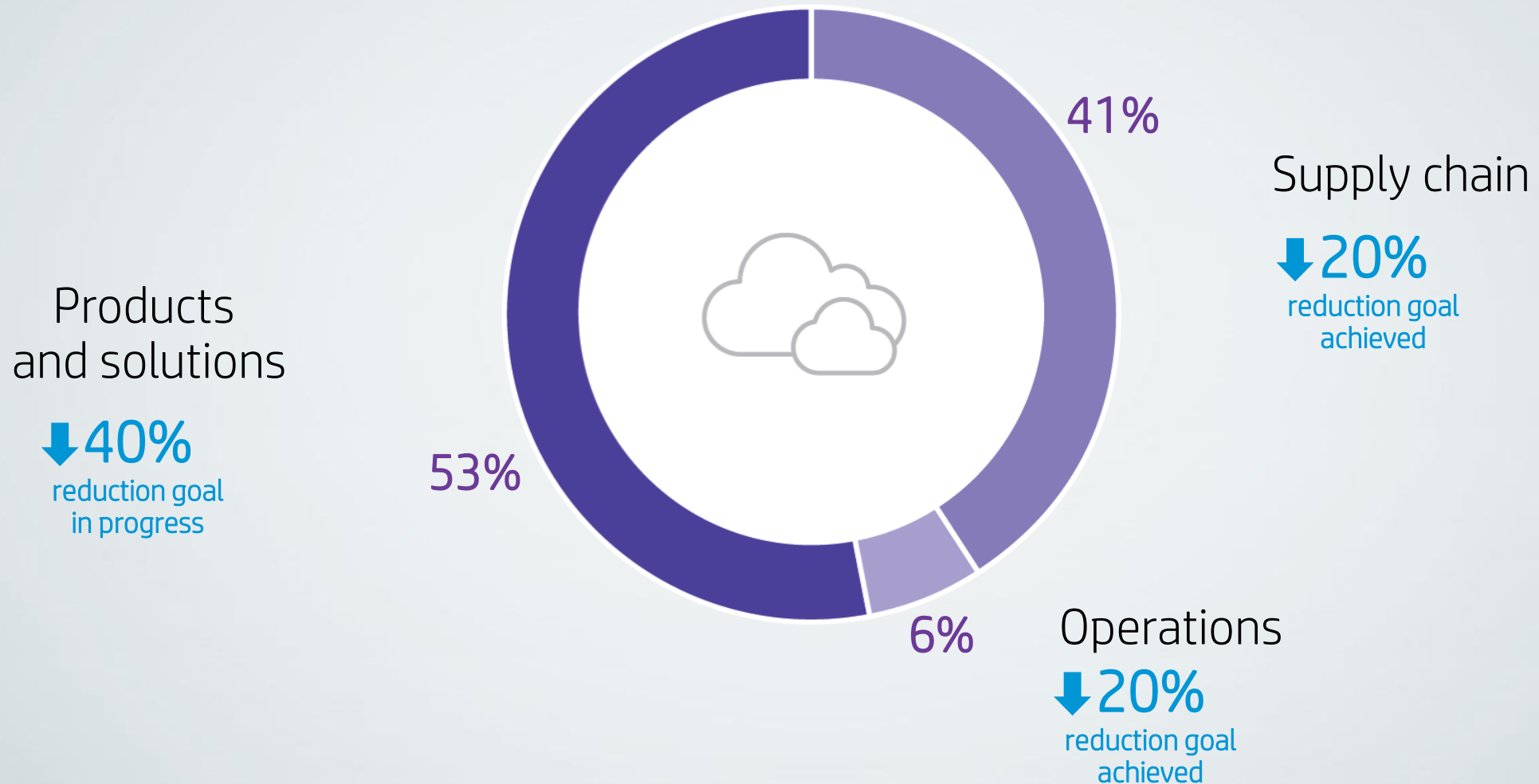# Operational efficiencies

Use of renewable energy reduces GHG emissions

Energy efficiency and resource conservation incorporated into daily operations and new construction

Design LEED-certified buildings

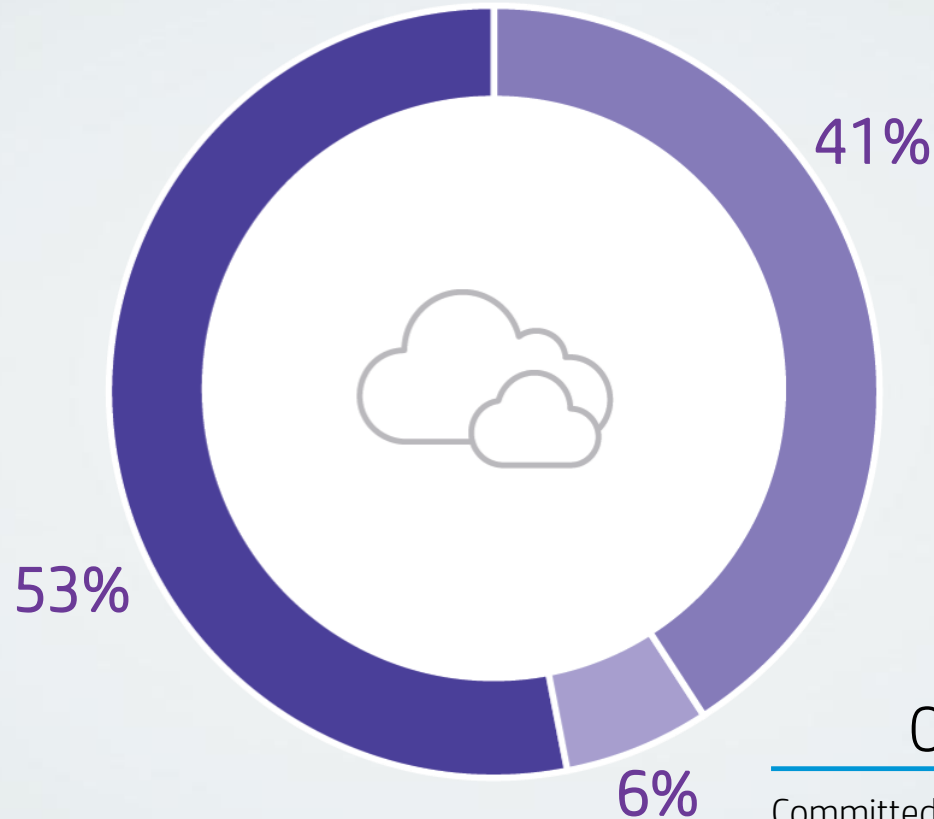Reduce water consumption, particularly in water-stressed areas

Hewlett-Packard Company's global emissions impact in FY15

41%

Supply chain

↓**20%**
reduction goal
achieved

**Products
and solutions**

↓**40%**
reduction goal
in progress

53%

6%

Operations

↓**20%**
reduction goal
achieved

hp

HP Inc.'s goals set in FY16

41%

Supply chain

Achieve zero deforestation associated with HP paper and paper-based product packaging

In 2016, will set new goal to reduce supply chain GHG emissions

Products and solutions

Reduce the GHG emissions intensity of our product portfolio by 25% by 2020, compared to 2010

53%

6%

Operations

Committed to 100% renewable electricity in global operations with 40% by 2020

In 2016, will set science-based target for Scope 1 and Scope 2 emissions from operations

Packaging innovation

Efforts advance customers' sustainability objectives and reduce HP's environmental footprint

Supports circular economy via use of recycled and recyclable materials

In 2015, reduced packaging material by 5,700 tonnes , compared to previous-generation products

Set goal to achieve zero deforestation associated with HP brand paper and paper-based product packaging by 2020

Energy-efficient personal systems

Industry leader in ENERGY STAR® certified and EPEAT® registered products

Since 2010, energy consumption of portfolio reduced by 25% on average

HP displays qualified for the ENERGY STAR Most Efficient Category

New devices are smaller, thinner, and lighter, reducing amount of materials used

hp

HP Inkjet Web and HP Indigo Presses

Enable customers to shift to digital and on-demand printing

Reduce the costs associated with printing, storing, packaging, and shipping materials

Lower environmental impact of printing in terms of raw materials, energy usage, and emissions

Reduce waste and the use of hazardous materials

HP Instant Ink

Customers can choose a monthly service plan based on pages printed

Replacement cartridges automatically delivered when printer runs low on ink

Used cartridges returned directly to HP's closed loop recycling program

Enables customers to save up to 50% on ink

Generates up to 67% less waste per printed page

HP in action: expanding our circle

80%+ of Original HP ink cartridges are made with recycled plastic

Up to 67% Less waste per printed page using ink-subscription based model such as HP Instant Ink

Carbon footprint of printing reduced 52% with business printers using HP PageWide Technology

CO_2

Up to 31% less energy used by the HP EliteDesk 800G2 Desktop Mini PC

hp

HP LIFE

Users around the world have access to free online business and IT skills courses

Educators use program to enrich their curriculums

Training helps create jobs, strengthen local communities, and build sustainable futures