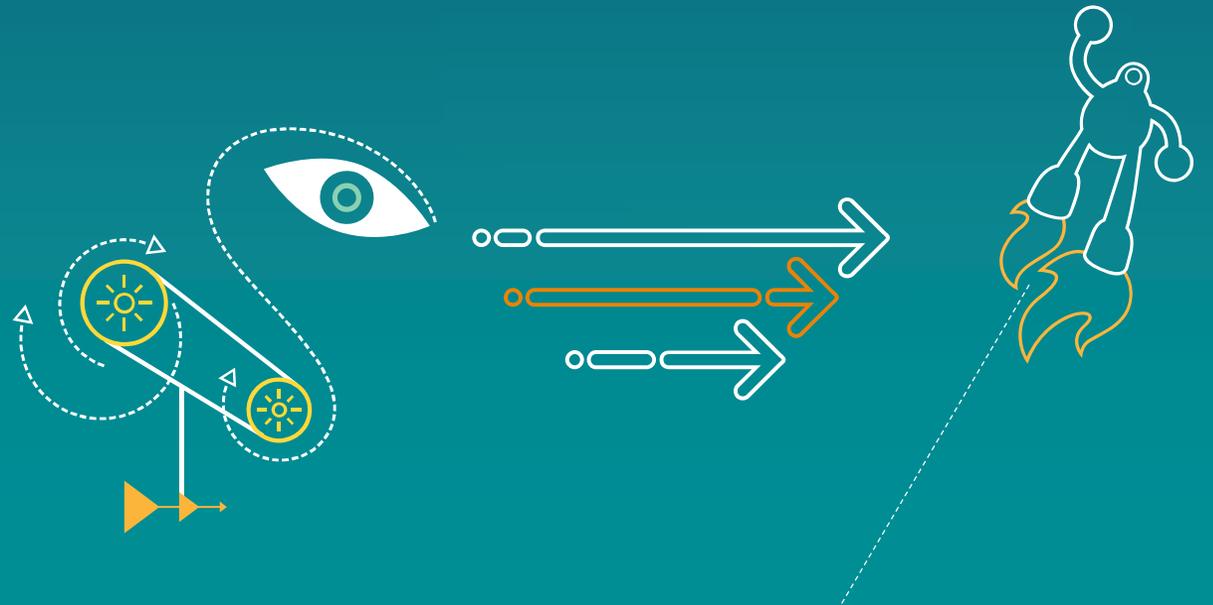


Michelle Lee
2015 ECTC – May 26, 2015

Sustainability in Microelectronics: Fabless Manufacturer's Perspective



1

Qualcomm
Overview

2

Social Responsibility
&
Supply Chain

3

Environmental
Responsibility
&
Supply Chain

4

Sourcing
Responsibility

5

Challenges
&
Opportunities

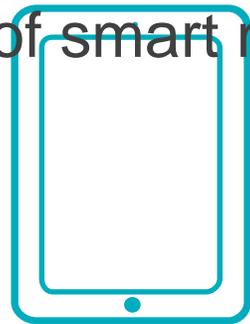
Agenda

What is Qualcomm?

- World-leading provider of wireless technology and services headquartered in San Diego, California
 - “Fabless” manufacturer (i.e., no factories)
- Annual revenue of \$26.4B (FY2014) with employees representing 120+ nationalities
- The largest provider of wireless chipset and software technology
- The Qualcomm Snapdragon mobile processors offer an unprecedented combination of processing performance and optimized power for the new generation of smart mobile devices



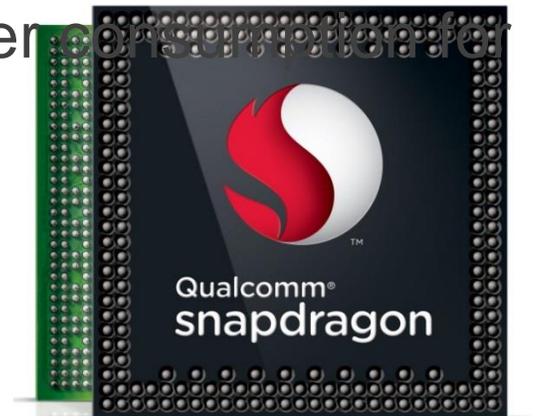
Drive smartphone growth and innovation



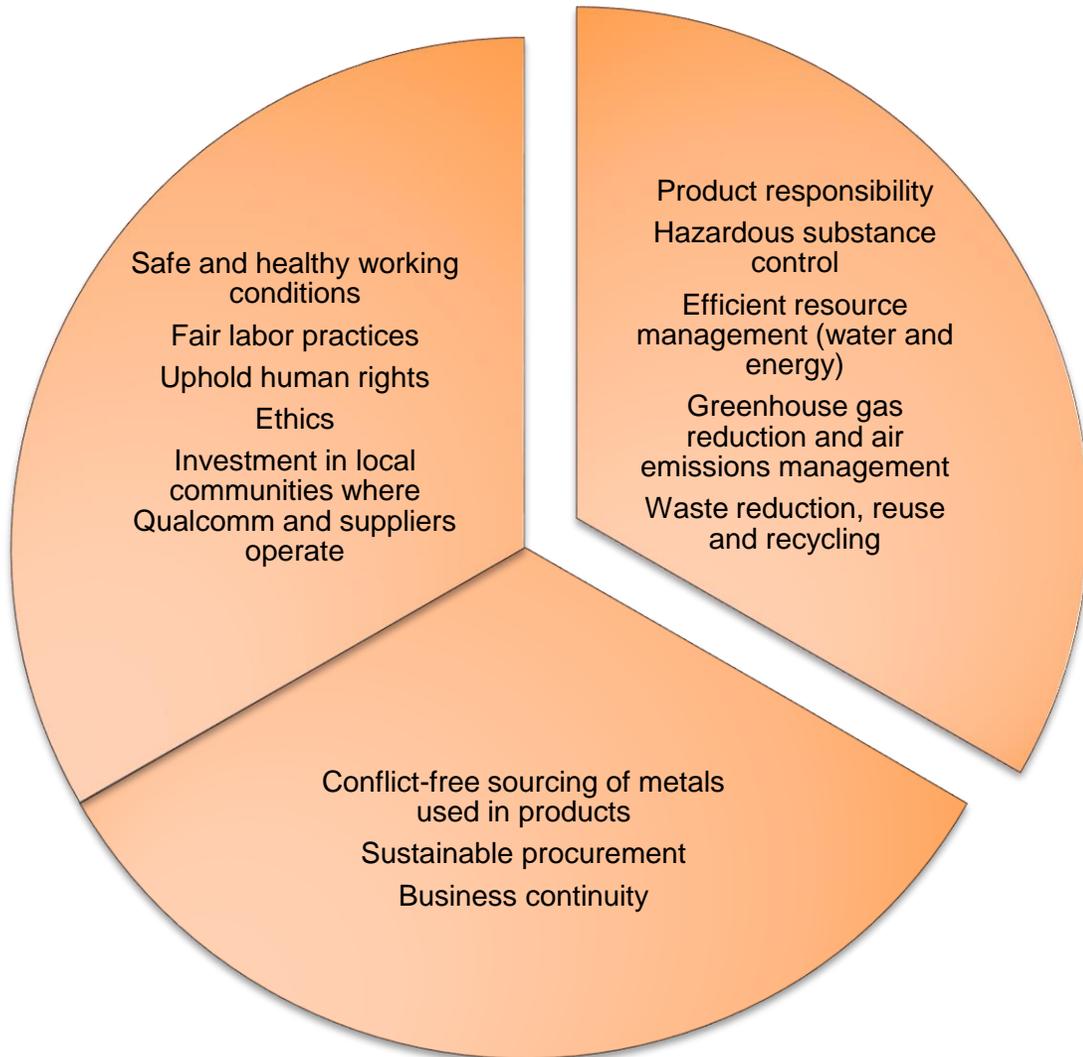
Create new mobile computing opportunities



Deliver the Internet of Everything

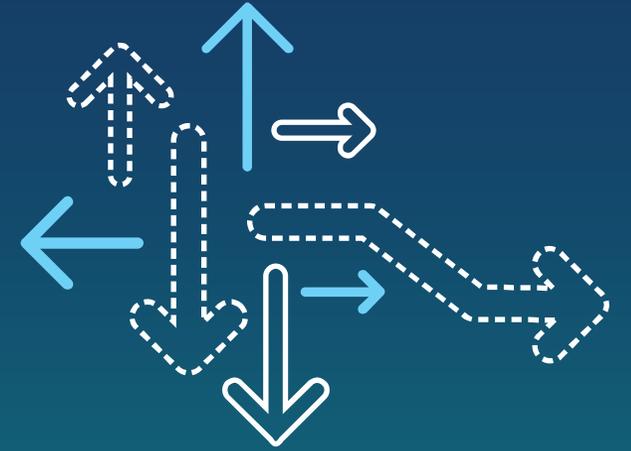


What is Supply Chain Sustainability to Qualcomm?



Qualcomm defines “sustainability” as a strategy that drives long-term growth and profitability through the inclusion of environmental, social and corporate governance issues in its business model

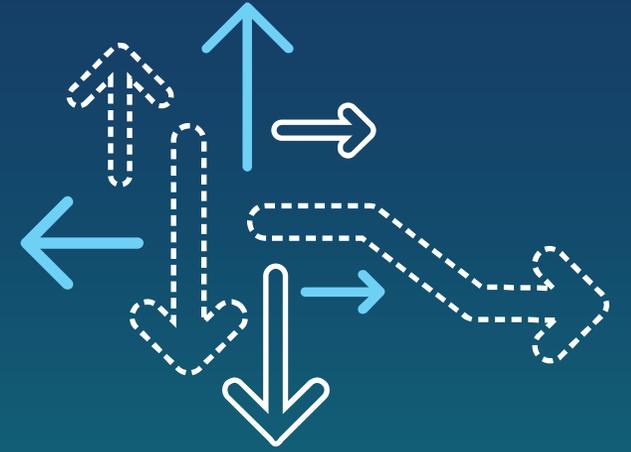
Social Responsibility & Supply Chain



Social Aspect

Qualcomm...

- Is committed to respecting human rights and avoiding complicity in any human rights abuse. Qualcomm's values and approach are guided by the *Universal Declaration of Human Rights*, the *UN Guiding Principles on Business and Human Rights* and the *UN Global Compact Principles*
- Is a member of the **Electronic Industry Citizenship Coalition (EICC)**
- Holds a seat on the **EICC Board of Directors** (Kevin Caffey, VP of Quality & Reliability Engineering)
- Has **adopted the EICC Code of Conduct** for its operation and suppliers
- Is committed to **improving social and ethical responsibilities** in the supply chain
- Requires foundry and assembly **suppliers to adopt the EICC Code of Conduct**
- Intends to **audit suppliers**, although all major suppliers have been identified as "low-risk" companies through the EICC Self-Assessment Questionnaire
- Employs two **IRTA-certified EICC Labor & Ethics Lead Auditors**



Environmental Responsibility & Supply Chain

Environmental Aspect

RoHS & REACH SVHC

All IC products meet RoHS & ELV maximum concentration value requirements

Qualcomm strives not to use REACH SVHC candidates in Qualcomm IC products

Environmental Sustainability Milestones

1999: Initiated lead elimination exploration

2003: Began Bromine elimination program & limiting use of hazardous substances

2004: Introduced industry leading Pb-free chip level package (CSP) products

2004: Began using Br-free mold compound in all Qualcomm IC designs

2009: Began designing new Qualcomm IC products bromine/chlorine-free

2010: Introduced Pb-free flip chip package products

2010: Introduced Bromine/Chlorine-free Gobi™

2011: Expanded Pb-free products and the list of prohibited substances in Qualcomm IC products

2013: Expanded greenhouse gas emission and water resource management goals & began requiring suppliers complete CDP/CDP H2O and/or EICC environment surveys

Supplier Environmental Governance Management

Through collaboration, not coercion!

Program

- Mature and robust program since 2003
- Qualcomm conducts periodic assessment of suppliers

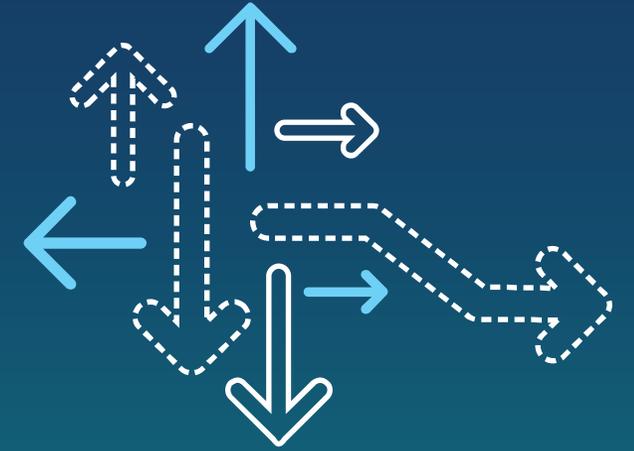
Suppliers

- All Qualcomm IC manufacturing suppliers are ISO14001 certified
- Assembly suppliers have an environmental process control plan that addresses raw material control, assembly process cross-contamination control, and finished product control

Expectations

- Suppliers submit *Supplier Disclosure* or equivalent to Qualcomm
- Suppliers submit homogeneous material chemical analysis results (Pb, Cd, Cr6+, Hg, PBB, PBDE, Br & Cl) for declaration of conformity
- Suppliers participate in the CDP/CDP Water Survey and/or EICC Environmental Survey
- Suppliers adhere to the JEDEC/IPC labeling scheme

Sourcing Responsibility: Conflict Minerals (Tantalum, Tin, Tungsten & Gold)



Qualcomm's Conflict Free Minerals Policy

Support
CFSP &
CMRT!

Conflict-free
sourcing!

Qualcomm is aware of concerns that minerals mined in conflict areas in the Democratic Republic of the Congo (DRC) and adjoining countries may be making their way into the electronics industry supply chain and may be fueling human rights violations and environmental degradation in the DRC region.

Qualcomm strives to provide DRC conflict free products by supporting industry-wide efforts to drive transparency in the supply chain and by expecting that our suppliers obtain materials from environmentally and socially responsible sources, including conflict free sources within the DRC and adjoining countries.

No Congo-free!



Conflict Minerals Due Diligence Highlights: Semiconductor Business

Accomplishments

- Developed an OECD-conforming due diligence program
- Communicated expectations to suppliers and educated direct suppliers via email and on-site visits
- Surveyed 100% of direct suppliers since 2011
- Have been sourcing DRC Conflict Free tantalum since 2013
- Conducted smelter visits

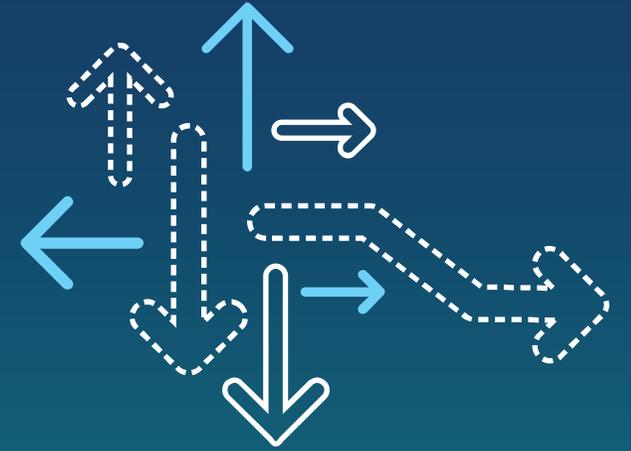
Trends

- Experiencing a decrease in total number of smelters in supply chain and an increased number of CFSP compliant smelters
- As of Feb 2015, all smelters reported are CFSP compliant or actively pursuing CFSP verification
- Many direct suppliers declared sourcing from the DRC or adjoining country through CFSP validated smelters

Goals

- Continue direct engagements with smelters via email and on-site visits
- Phase 1: Require suppliers to use only CFSP compliant or “Active” status smelters
- Phase 2: Require only CFSP compliant smelters

Challenges & Opportunities



Challenges & *Opportunities*

Supply Chain Issues

- Potential human rights abuse concerns
- Student and migrant workers
- Varying levels of sustainability knowledge in supply chain
- Inconsistent accuracy and credibility of data received from the supply chain (e.g., conflict minerals)

Engage with suppliers & reach out to smelters

Proliferation of Product Stewardship Legislation

- Ever expanding substances of concern & pace of expansion
- RoHS II conformity assessment provision solidified the need for homogeneous material testing

Steer RoHS III toward the “risk based” homogeneous material testing

Unrealistic Customer Expectations

- “Guarantees” and “certifications” for conflict minerals, social responsibility, substance exclusion, etc.
- Misguided substance restrictions (e.g., prohibition of BFR in Au wire, Pb in Si wafer, etc.)
- Overly broad and inapplicable testing requirements (e.g., ODC analysis for solder, testing for REACH SVHC, etc.)

Continue dialoguing with customers for better understanding of supply chain limitations

Exotic & rare materials being employed to facilitate technological advancement

- Unknown environmental, safety, and supply chain impact

Educate R&D staff & get involved early in the R&D process

Qualcomm Sustainability on the Web

- Conflict Free Minerals
 - <https://www.qualcomm.com/company/sustainability/products/conflict-free-minerals>
- Responsible Product Design
 - <https://www.qualcomm.com/company/sustainability/products/product-responsibility>
- Qualcomm Sustainability Report
 - <https://www.qualcomm.com/company/sustainability/reporting>



Conflict Free Minerals

Contributing to the development of a DRC conflict free supply chain

Submit your inquiry about Qualcomm

Product Responsibility

Practicing precaution.

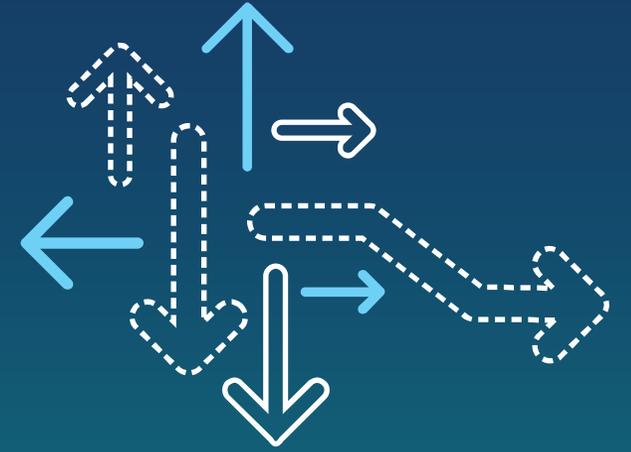
We address the sustainability of our products through our Environmental Management System and various hazardous-substance elimination programs. We practice the "precautionary principle," taking preventative measures regarding certain chemicals, even if science hasn't indicated clear environmental or health hazards. Our own policies are often more stringent than applicable law.



QUALCOMM

Qualcomm Sustainability Report 2014

Appendix



Qualcomm Sustainability & Reporting (QSR) Governance Structure

Our QSR Governance Structure



QSR Leadership Committee:
Provides guidance on key global citizenship issues as part of Qualcomm's business strategy.

QSR Committees:
Implement QSR Leadership Committee's directive into companywide socially responsible practices that are broadly shared with our key stakeholders through various communication channels and annual reporting efforts.

Our QSR Priorities

Our Governance

- We demonstrate accountability, transparency and integrity throughout our operations and interactions with our stakeholders

Our Products

- We meet and exceed industry standards for ethical business practices, product responsibility and supplier management

Our Workplace

- We provide a safe and healthy work environment where diversity is embraced and various opportunities for training, growth and advancement are strongly encouraged for all employees

Our Community

- We grow strategic relationships with a wide range of local organizations and programs that develop and strengthen communities worldwide

Our Environment

- We expand our operations while minimizing our carbon footprint, conserving water and reducing waste

**We aim to
achieve**

Thank you

Follow us on   

For more information on Qualcomm, visit us at:
www.qualcomm.com & www.qualcomm.com/blog

© 2013-2015 Qualcomm Incorporated and/or its subsidiaries. All Rights Reserved.

Qualcomm and Snapdragon are trademarks of Qualcomm Incorporated, registered in the United States and other countries. Other products and brand names may be trademarks of registered trademarks of their respective owners.

References in this presentation to Qualcomm may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable.

Qualcomm Incorporated includes Qualcomm's licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm's engineering, research and development functions, and substantially all of its product and services businesses, including its semiconductor business, QCT.

