

## **GRC Workshop # 2: Make Your Plans Notes**

### 1) Housekeeping, Challenge Updates from GRC Leadership Team, Review of Pre-Assignment

- Thank you for joining us for Week 2 of the (R)Tech Global Retail Challenge!
- Exciting week with a first assignment handed in. Our team loved viewing all the submissions.

### 2) Mentor Feedback: Chloé Barnaby, Director, Global Sustainability at Aldo Group

#### **Top 5 Teams and Feedback (see Assignments attached)**

- **Team 1 - Samsung Phone:** Good choice as it helps give perspective since most people own cell phones these days. Very pertinent for today and the future as smart phone use grows in China, India, and around the world. Noted that it took 40 minutes to disassemble: that shows how complex cell phones are and how much of an intensive process it is for recycling purposes.
  - How long does it take to put together the phone vs. disassemble it?
- **Team 8 - Apple Charger:** Nice use of checklist and took apart the wire down to the cooper.
- **Team 12 - Microscope:** Very nice before and after pictures, looks really cool. Some plastic pieces shattered during the process.
- **Team 19 - Hairdryer:** Really nice presentation and pictures.
  - Focus on the weak spots - the parts that get damaged due to the extreme heat. There is no reason why a hairdryer couldn't be repaired with replacement parts. Think of 3d printed parts.
- **Team 26 - Macbook Air:** Meticulous disassembly and great photos. Fun how they spelled out their team number with the keyboard keys.

#### **Notes for all the teams to take-away from the project:**

- Loved to read how you disassembled products, how difficult or easy it was and which tools you used.
- Disassembly does not stop at the object itself: did you think of taking apart wires, circuit boards and RAM?
- Great opportunity with Legos and wooden Blocks products for closed loop, circular design.
- Eyeshadow palette, hockey padding, jeans and pen were original product choices.
  - MAC Cosmetics recycles, how can we go further in this industry?
- When you think of the entire product: what can be easily replaced? What are the weak spots that can be easily refurbished instead of discarding the entire product and buying a new one?

- Products from makers such as IKEA have very high potential for reuse, repair, designed for easy disassembly. IKEA already does a lot by offering replacement hardware, a parts library for best selling items, and an as-is section. There is a demand for old Ikea parts. Look into IKEA as a stakeholder for your next assignment.
- The choice of a coffee maker makes me think of the challenge of disposable coffee pods. Are those companies (Nespresso) taking responsibility for end of life of their coffee makers? Something to look into for stakeholders, research, etc.
- Teams who took apart services provided good analysis, reflection about the user need and the service experience

### **Key Takeaway from the Teardown**

- This exercise was more about the process of breaking down an object than the reporting back but you all did a fantastic job. We hope you had fun doing it!

### **Assignment 1 - Workshop Questions**

**Question:** Some teams chose services to tear down. Were they off-base?

**Answer:** Not at all! A service tear-down is as relevant as a product tear-down.

**Question:** Some chat messages concerned about not being aware that they had to send in a Pwpt.

**Response:**

Karen Hold - Teams that submitted a PWPT went above & beyond what was asked for in the teardown assignment.

Richard Donovan - However, presentation is key in delivering a clear message to the mentors who have not been with you through the whole process. This is important to keep in mind for future assignments and also for your final pitch.

NB: Guidelines for next assignment are included in the PDF file of the Workshop Presentation (Page 26).

### **3) Review of Assignment #2 and Q&A**

**Next Workshop:** Lisa Davis, Sustainability Manager for IKEA

October 10, 2018 at 12 PM EST at the following [Zoom Link](#).

Call in Numbers: US: +1 669 900 6833 or +1 646 876 9923

[International numbers available](#).

Meeting ID: 434 955 951

# **Appendix**

## **Team 1**

WEEK 1



ASSIGNMENT #1



T TEAR-DOWN LAB

# SUMMARY

1- CHOSEN PRODUCT

2- REASONS FOR OUR CHOICE

3- PICTURES OF THE DISASSEMBLED PRODUCT

4- THE TEAR-DOWN EXPERIENCE

# CHOSEN PRODUCT

## Samsung Galaxy A3



► **First Release:** January 2, 2017

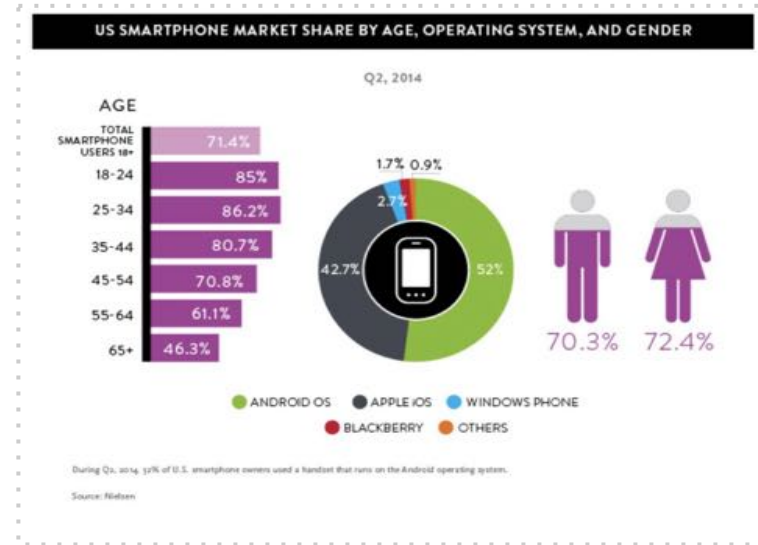
► **Key Feature:** Mid-Price Smartphone

► **Market Segment:** Low Income Buyers

# REASONS FOR OUR CHOICE

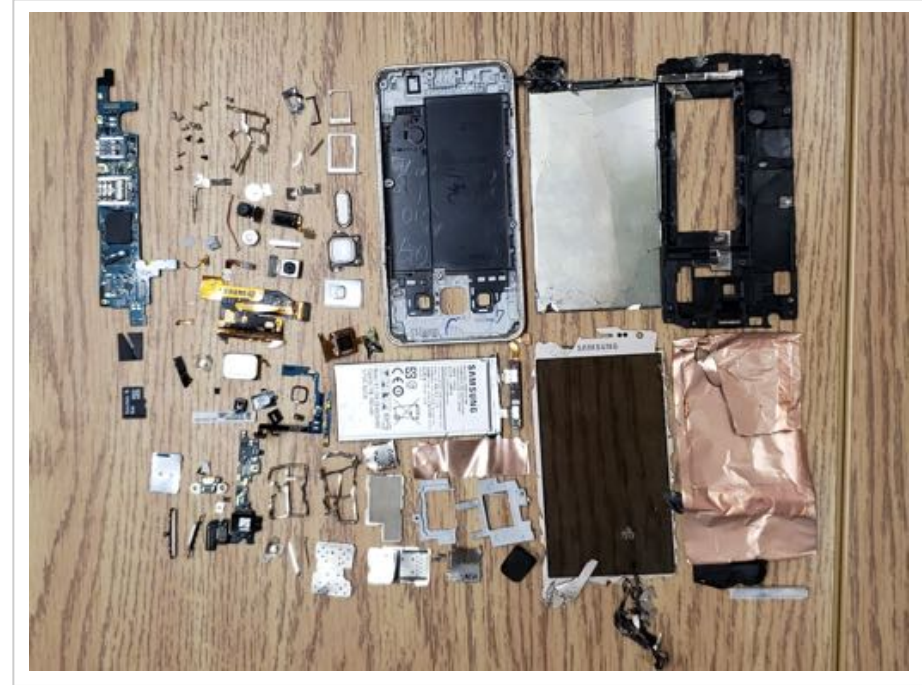
What rhymes with a millennial? Digital! Indeed, millennials are representatives of the digital culture, along with Generation Z. We chose to disassemble a smartphone for its symbolic, we believe it is the best tool for retailers to reach out to them.

Both of these generations encapsulate the future of the retail industry in many ways. According to a study made by the ICSC, their consumption rate will continue to increase from the year 2002 to 2022 up to 171%.



Reference:  
<https://www.openxcell.com/7-top-tips-to-win-the-hearts-and-minds-of-millennial-mobile-app-users>

# PICTURES OF THE DISASSEMBLED PRODUCT



ESTIMATED NUMBER OF PIECES: 83  
TIME REQUIRED TO DISASSEMBLE: 40 MINUTES



# THE TEAR-DOWN EXPERIENCE

## WHAT WE NOTICED

### Product (1/2)

- High number of small pieces combined with a maximum use of internal space.
- Product has a simple ergonomic form making it easy to manipulate.
- Product is difficult to take apart due to a compact design.

### Product (2/2)

- Specialized components installed with different fasteners (welding, screw and glue).
- Specific tools are required to open the product up.

# **Team 8**

*Use this checklist to help you design for disassembly and also think about the system as a whole?*

*Designing for disassembly: for the whole product, think about...*

■ Is it designed for easy disassembly?

- No - it is not designed to be taken apart with common tools or general expertise.
- Only exception is the 'plug in' part, which is designed to be removable.

■ Minimum number of parts?

- There are some redundancies within the product and it could definitely be made with a smaller number of parts.

■ Simple structure and form?

- The outer structure and form is extremely simple
- On the opposite note, the internal structure is very complex. Most parts are held together with glue and there is no direction as to which component goes where

■ Requires only a few standard tools to disassemble?

- No

■ Minimum number and types of fasteners?

- The only type of fasteners used are screws and glue. Although this is minimal, the glue makes it almost impossible to disassemble without causing destruction to parts

■ One fastener holds multiple parts?

- Yes - outer plastic shell held together all electrical parts

■ Access fasteners on the same axis?

- No access fasteners at all, clearly was not meant for disassembly

■ Snap, slide fasteners or clips rather than screws or glues?

- No - outer plastic shell was glued together

■ Hand-strength only needed to assemble and disassemble?

- No - had to use at least 3 different tools to disassemble
  - Pliers
  - Screw-driver (no screws, used for leverage)
  - Wire cutter

■ Coarse threaded screws for speed; nuts and bolts for strength?

- No, no screws on the outer case; rather it was adhered with a glue
- Screws were present internally to hold together metal and electrical components

■ Fasteners fit for purpose (repeated use, strength)

- No fasteners meant for repeated use

■ Good visual documentation on assembly and disassembly embedded in product?

- No visual documentation on how to assemble or disassemble was embedded in the product

**Designing for easy repair and upgrades: for the whole product, think about...**

■ Is the design based on modular assemblies to make whole components easy to replace?

- This product is not modular at all, it is designed to have the entire product replaced rather than its parts

■ Is it easy to identify and reach those components likely to need maintenance or upgrade?

- It's incredibly difficult to access any components inside the metal casing

■ Does the design lend itself to easily installed upgrades?

- The only portion of the charger that is easily upgradeable is the outlet piece. This makes sense as the company could then easily switch out this piece to adapt to international outlet formats.

■ Are the diagnostic tools built-in for identifying worn or obsolete parts?

- There are no diagnostic tools built in for identifying obsolete or worn parts. The only way to diagnose if the charger as a whole isn't working is to plug it into a laptop.

**Designing for closing the materials loops - for each component think about:**

■ Does each individual component have a defined use period?

- Each individual component does have a defined use period, with some metals being able to be used for a longer time than plastic or electrical parts

■ Can the individual materials be recovered easily?

- Large sheets of metal (such as the copper casing) can be recovered easily, however smaller components cannot.
- The plastic cannot be recovered easily, as it is almost impossible to reach the internal components without breaking it

■ Is the number of materials kept to a minimum?

- The number of materials is not kept to a minimum. Materials include:
  - Plastic
  - Copper
  - Glue
  - Aluminum
  - Tape
  - Steel (screws)
  - Wires
  - Microchips
  - Wax

■ Are parts labelled for easy materials identification?

- Parts are not labelled at all, it is difficult without specialized knowledge to identify many of them

■ Can the materials used be fed back easily into the biological and technical nutrient cycles?

- Materials could only be entered back into the technical nutrient cycle, and only the following materials:
  - Plastic
  - Copper
  - Aluminum
  - steel

■ Are the materials used sourced from 'closed loop' sources?

- No, all components are sourced new for each new item

**Designing for optimum business model**

■ Does the warranty encourage repair, service and replacement of components?

- There is no warranty on this item, therefore disposal and new purchase is encouraged

■ Is the overall business model based on product-as-service?

- The overall business model is not based on product-as-service, it's based on being non-repairable and expendable

■ Is the overall business model based on closed-loop principles?

- The overall business model is NOT based on closed-loop principles





# **Team 12**









# **Team 19**



# Global Retail Challenge 2018

Team 19 – Week 1 Assignment

Kirsten Garlitos, Sam Kim, Hillary Kritt, Gaby Luttecke, Diana Whalen

# Before Disassembly: T3 Hair Dryer



## Designing for disassembly:

- Is this product designed for easy disassembly?
  - No it was quite difficult to disassemble
- Minimum number of parts?
  - It is hard for us to know if this is the minimum number of parts required without being electrical engineers.
  - There was a decorative rhinestone on the inside that no consumer would see- did not seem necessary.
- Simple structure and/or form?
  - The structure/form looks simple from the outside, but on the inside, there are many more complexities.
- Requires only a few standard tools for disassembly?
  - Requires many unique tools for disassembly. There were some pieces that we were afraid to disassemble without electrical knowledge for fear of electrocution.
- Minimum number and types of fasteners?
  - This is difficult for us to say without electrical knowledge.
- One fastener holds multiple parts?
  - In some cases- yes.
- Access fasteners on the same axis?
  - For the most part- no.
- Snap, slide fasteners or clips rather than screws or glues?
  - There are many more usages of screws than clips or slide fasteners.
- Hand-strength only needed to assemble and disassemble?
  - Needed more than hand strength for most disassembly and likely reassembly as well.
- Coarse threaded screws for speed; nuts and bolts for strength?
  - Screws were used throughout
- Fasteners fit for purpose (repeated use, strength)
  - The fasteners seemed fit for purpose - repeated use - over disassembly.
- Good visual documentation on assembly and disassembly embedded in product?
  - No- there was no clear guidelines for disassembly or assembly.

## After Disassembly: T3 Hair Dryer



### Designing for Repairs & Updates

- Is the design based on modular assemblies to make whole components easy to replace?
  - No - only one component (i.e blow dryer nozzle) can be replaced by a user without using a tool. It was necessary for us to use the tools to disassemble and it was hard to do so without breaking parts
- Is it easy to identify and reach those components likely to need maintenance or upgrade?
  - No - every components that was inside the blow dryer was not visible at all. We would never have seen the components if we had not torn it down
- Does the design lend itself to easily installed upgrades?
  - No - there is no program or software embedded in the product in the first place. The design was not structured for potential upgrades; if users wanted an upgrade in functionality or performance of the blow dryer, they would have to purchase a new one that can meet the requirements.
- Are the diagnostic tools built-in for identifying worn or obsolete parts?
  - No - it was difficult even to see what went inside the blow dryer unless it was completely torn apart

# Additional Worksheet Questions

## Designing for closing the material loops

- Does each individual component have a defined use period?
  - No, individual pieces could break at any moment, potentially leaving the entire device unusable. Because the device is difficult to take apart, individual pieces cannot easily be replaced.
- Can the individual materials be recovered easily?
  - No, individual materials are molded to fit the specific product and cannot easily be recovered and used to create another product.
- Is the number of materials kept to a minimum?
  - It's hard to tell what materials are absolutely crucial to the product's function and what are not. The only material that we decided was not needed is the tiny rhinestone that was added to the tip of one component. It also seems that some of the purple rings are added solely for decor, although we cannot be certain.
- Are parts labelled for easy materials identification?
  - No, parts are not labelled at all.
- Can the materials used be fed back easily into the biological and technical nutrient cycles?
  - No, the materials cannot be fed back easily. Materials are plastic and are clearly made to be used in this one device.
- Are the materials used sourced from 'closed loop' sources?
  - No, materials were made just for this one blow dryer. Blow dryers come in different shapes and sizes, and companies often update designs and models on a fairly regular basis, leaving older models outdated and obsolete.

## Designing for optimum business model

- Does the warranty encourage repair, service and replacement of components?
  - No, it's not designed to be repaired or to replaced its components.
- Is the overall business model based on product-as-service?
  - No, it's only a product, it doesn't provide any additional services.
- Is the overall business model based on closed-loop principles?
  - No, the product was made to be disposed at the end, not recycled

# **Team 26**







MacBook Air





