Sourcing Components: New Zealand Edition

This week

- Today: Presentation(s)
- Today: Sourcing electronic components
- Wednesday: Major assignment assigned
- Wednesday: Soldering tutorial

Mechatronics Engineering: NZ considerations

- Some vendors won't ship out of their country (e.g., McMaster Carr)
- NZ customs fees
  - Generally on orders >$400 NZ
- Small vendors might have very expensive shipping fees.
  - E.g., Servo City: $50 USD minimum shipping.
- Long shipping times:
  - 2-4 weeks isn't unusual
- Buying in NZ means dealing with smaller companies.
  - Nice! Support local businesses!
  - Not nice! Many still use telephones, paperwork, and price-on-request models.

Buying Electronics: Overseas I

- **Sparkfun**
- Pro: Excellent documentation
- Pro: Good tutorials
- Pro: Very easy-to-use website
- Con: US-based, shipping ~2wks
- NZ distributor: Nicegear (not 100% of products)

- **Adafruit Industries:**
- Pro: Many integrated solutions
- Pro: Good tutorials, awesome people
- Con: US-based, shipping ~2wks
    - NZ distributor: Nicegear (not 100% of products)

- **Digikey & Mouser:**
- Pro: Extremely extensive
- Pro: Shipping discounts – free shipping (fast!) to NZ when order exceeds ~$70
- Pro: Serves as a distributor for Sparkfun, Adafruit, etc. (skip shipping fees!)
- Con: US-based, and website is extensive but more difficult to navigate

Buying Electronics: Overseas II

- **Ali Express, Banggood, Deal Extreme, etc. (East Asian Outlet stores)**
- Pro: Cheap as
- Pro: Extensive range
- Con: Long, long shipping times (can be unpredictable: 1-6wks)
- Con: Variable quality – some high-quality parts... some not-so-much
  - *Recommendation: Only use if you have time to iterate at least once! Best not to use this during projects for any lectures, as the turnaround time is just too much.*

- **Seeed Studio**
- Pro: Good prices
- Pro: Some decent tutorials
- Pro: Awesome services – PCB fabrication, CNC milling, etc.: your connection to the Chinese marketplace.
- Con: I have experienced longer shipping times from them

Buying Electronics: NZ

- **Nicegear & Mindkits**
- Pro: NZ-based + fast shipping (3-5 days)
- Pro: decent range of parts (Sparkfun & Adafruit distributor)
- Con: Definite price markup

- **Element14**
- Like Digikey & Mouser
- Pro: Extensive
- Pro: Serves as distributor for some other brands
- Pro/Con: Auckland warehouse (but also other overseas warehouses; check that your parts are actually available!)
- Con: Can be difficult to navigate

- **Jaycar**
- Pro: brick-and-mortar shop in Wellington. Same day!
- Con: Not particularly extensive
- Con: Expensive for many of the same parts you can get on AliExpress, etc.

- **RS Components:**
- Pro: Next-day shipping for free!
- Pro: A good range of components
- Con: Expensive with a somewhat difficult-to-navigate site.

Buying Electronics: NZ

- Tip Shop
  - https://wellington.govt.nz/services/environment-and-waste/landfill/second-treasures-shop
  - Pro: you never know what you'll find.
    - Cables, old electronics, motors, raw materials, old standup paddle boards
  - Pro: Usually really inexpensive
  - Con: Not good when you need something very specific.
    - Improvisatory/Found-object artmaking

COMPONENT	VENDOR SUGGESTION	NOTE
Arduino / Teensy	Nicegear or Mindkits	Sparkfun & Adafruit are good as well.
Random switches & buttons	Jaycar	Nice to be able to see these in person.
Breadboards, solder, perfboard, prototyping stuff, and wires	Jaycar, Mindkits, Tip shop	Also check http://www.makershop.co.nz
Sensors (temperature sensors, range sensors, etc.)	Nicegear, Mindkits	Sparkfun & Adafruit are good as well.
Any of the above where you can afford to wait at least 8 weeks	Ali Express, Amazon, ebay	Proceed with caution.