# Right-To-Repair Submission



## Single-use society

The days of buying a product for life, be it a shirt, a toaster, or even a car, are long gone. Optimised productions systems, vertical integration, offshoring and proprietary design all function to lock customers in for the lifetime of a product, be it a short life.

Products are not built for longevity nor expected to last. For the majority of manufacturers, repair avenues are a painful afterthought, especially where warranty is concerned. Having physically present local staff with the skills to repair an item is a costly overhead. A simpler solution logistically is to do an item swap, and have the device repaired elsewhere, often in a region with lax labour or environmental regulation, or in a bulk assembly line process. The preference is to lock a customer into an upgrade stream, where they regularly dispose of one product and replace it with another from the same company.

It is only since detrimental environmental effects have been formally acknowledged that producers are being held accountable for the end-of-life disposal impacts, and often the remedies are vague at best. Having a local market will provide a greater level of stewardship over offshore solutions for disposal. Focus on single-use products similar to a plastic-straw-mentality should no longer be considered acceptable.

As has happened in other countries, notably parts of the USA and more recently the EU, provisions are being made to allow freer access to information, training and components, in order to foster a strong local repair industry. Unsurprisingly, this has met with opposition from those who currently hold monopolies in this field (Root 2019). No doubt we will see similar opposition in this country, as these corporations already have a strong hold at all levels of society.

Many of the examples provided here relate to the automotive industry or consumer electronics, both of which with I have had considerable experience. But as the lines of technology continue to blur, they could be applied just as easily to an IoT toaster or a tractor. Hopefully this submission will help influence legislation to allow Australians to maintain sovereignty over goods which they have purchased with the expectation of a long and useful life. Furthermore, enacting these changes will assist in the development of a robust workforce with the ability to tackle global challenges at a local level.

## Rebuilding a Reuse and Repair Culture in Australia.

Much like building demo yards or auto wreckers, many usable electronic parts can be recovered and reused. Unfortunately they often join the general waste stream (landfill or burning), or get sent for offshore processing at the end of a product life. Not only does this deplete the quantity of spares locally and shirk environmental responsibility, there is also a risk of sensitive data ending up in the hands of nefarious operators with the skills to extract said information.

Recycling initiatives are on the increase, but primarily focus on batteries which can be broken down into sought-after raw materials such as lithium and lead. (ABRI, Burnet 2020). Not only will stronger right-to-repair legislation help sustain equipment and ensure It is effectively processed at end-of-life, it will foster a local repair and manufacturing economy reminiscent of Australia's innovative can-do history. Additionally, grass-roots sustainability has been shown to hold great value in a global economy where complex logistic systems can be rapidly upended through political, financial or natural causes. (OECD 2020)

COVID-19 has raised issues in international logistics and supply, pointing to a requirement to localise services in many cases. Smaller scale repair operations can function with minimal physical contact, and are easier to keep biologically clean. Larger operations face more difficulties in adopting Covid-safe behaviour, with more administrative staff, and often based in shopping centres or metropolitan areas. Offshore administration centres, not common amongst small business, have also shown critical vulnerability under the COVID-19 pandemic (Braue 2020). A local stockpile of new and refurbished components, coupled with a skilled workforce, will benefit business continuity and accelerate economic recovery. Even beyond the pandemic impact, there is evidence that Australia can compete in niche manufacturing, not only in providing materials for a strong local repair economy, but exporting to other specialist markets (Varral 2020).

## Anti-competitive behaviour, substandard value for customers.

Un-fixable products create a culture of dependence on the upgrade cycle, with few options other than to stay locked in, or change to a manufacturer with similar policies. Black-box design is the norm, where an item is sealed "for life", despite potentially containing readily replaceable parts, or common components that have had slight modifications to make them proprietary rather than universal. This intentionally introduces hurdles and reduces desirability for independent repairers and secondary markets (Rainer 2020).

Often replacement components do exist, but are simply not available in Australia. Manufacturers maintain controls over imports, or group parts together inflating repair costs. This is often done because of the higher level of skill required for discrete component

repair, or to reduce the additional time it takes to do a more complex job. Repair cost is not factored in, the customer must simply pay the premium. A repairability index similar to IFixit's product ratings, or the rating system proposed for Europe by Halte à l'Obsolescence Programmée (HOP) would help guide customers in purchasing products that can be easily fixed, by whoever they choose.

**Real life example:**
Volkswagen Golf oil pump gear not available as an individual item, but packaged with crankshaft locally for over $1000AUD. Purchased as a single unit from Poland for less than $60AUD including freight. Labour cost reduced due to no requirement to transpose the gear or replace the crankshaft, a repair unavailable through the dealership.
**Repairability rating: Low for manufacturer, High for independent.**

There is often an eagerness for proprietary repairers to over-service, for example replacing a whole phone rather than just the screen. This can also relate to the bundled-part anecdote above, where one item can't be supplied individually, even if parts are not necessarily dependant on another. A similar example exists when a low-skilled technician follows a proprietary repair flowchart for a specific vehicle. There may come a point where the manufacturer repair process advises to replace a large and costly complete item, even when the fault is only with a sub-section of that item. This shotgun approach introduces excess waste and consumer costs, and does nothing for skills development. Independents have more flexibility to do this type of repair, as the same KPIs and overheads do not exist, and they have genuine fault location skills rather than simple diagnostic processes.

**Real life example:**
Landcruiser with engine fault, Toyota recommends replace engine wiring harness @$1500 + $360 labour .
Independent locate and repair single damaged connector 2hrs labour + consumables $300.
**Repairability rating: Low for manufacturer, High for independent.**

## Risk to business continuity and data security.

Common arguments for keeping within a manufacturer's ecosystem and the manufacturer locking down said system include:

- Better controls over theft, misuse and resale of hardware,
- Greater interoperability (within the ecosystem),
- Simplicity of use.

While these points are true to some extent, benefits for IP protections largely favour the manufacturer under the guise of consumer protection. While the threat of product copyright theft exists in Australia, it is unlikely to stifle innovation, as strong legal protection exists for registered Intellectual Property. There is even an argument that data security risk is *lowered* through operational transparency, allowing security agencies and customers to "audit" software code (Duric, 2020).

The myth of throttled innovation through open IP may be true for some unimaginative operations, but not everyone agrees. Tesla workshop manuals for their Model S have been

available to the public at a reasonable fee since 2015, and new models regularly added (Tesla Service). This was largely a result of the Massachusetts Right to Repair legislation (Commonwealth of Massachusetts 2012), but Tesla later open-sourced many patents in the hope it would encourage the market and *increase* innovation (Tietze, 2017). It would be hard to argue this has slowed the development of the company and their products. There are a number of independent Tesla repairers globally, which does not appear to have damaged the company's reputation, product quality or profit.

Trusting an organisation with data and business operations can be costly. Usually any registration also comes at the cost of handing over personal information, which may be farmed out to subsidiaries, on-sold externally, or open to theft by third-parties. Software & cloud managed Internet-of-Things (IoT) appliances at all levels, from network routers to printers, or home appliances such as vacuums or speakers run the risk of being bricked (where the unit becomes essentially useless), either through a business decision by the manufacturer, external market or regulatory forces, or malicious action (Connected World 2018). The concern here is not so much a right-to-repair, rather a right of owners to access operational information to assess and resolve issues as, or before, they arise. This may be a situation where slow or non-existent response from manufacturers could be very costly. A local agent with the right information could act quickly, averting disaster.

**Real Life example: 1:**
Amazon web outage breaks vacuums and doorbells (BBC, 2020).
**Real Life example: 2:**
Alarm system routes all alerts to an app via a server in China. The server is no longer supported. Alarm becomes bricked (Personal Experience).
**Real Life example 3:**
Sonos renders working speakers intentionally inoperable as part of their upgrade program (Whitwam, 2020).

There is no shortage of these examples to be found, and these could just as easily be business infrastructure or therapeutic systems. A large number could be solved by providing repairers access to firmware to change hard-coded web references, or provide an offline-fallback condition for devices no longer supported by the manufacturer or where no network is available.
**Repairability rating: Low, due to heavy dependence on proprietary IoT services.**

## Basic needs in a connected environment

Many products available "do everything", when only a small subset of those features are actually used. This feature-bloat and the inability for systems to cope with software updates creates the impression that the device is no longer of any value. These goods could be repurposed by third-party repairers for use in environments deemed too costly to implement new infrastructure, such as remote communities and stand-alone facilities, really anywhere a customer has a need for such a device. My experience in the repair industry has been that some owners simply don't have the budget to upgrade or pay inflated repair rates, but are still dependent on their appliance, PC or car for basic necessities. Many organisations exist with the aim of getting resources to bridge the "digital divide", like

Computerbank, Computer Aid, or one of my previous (now defunct) co-operative endeavours, EcoGeek Recycled Computing.

## Employment

The more repairers there are, the more experts will be produced, if a diverse employment landscape is permitted to exist. Engineering, Electrotech and repair are high on the list of skills shortages in Australia (Department of Education, Skills and Employment 2020). Greater scope for employment would lead to more interest in the field. Opportunities for training and educational organisations will also be in greater demand, with predicted on-flow to ancillary organisations such as accreditation, parts supply, advertising and other sectors.

## Environment

In addition to the e-waste implications that have been broadly discussed, container transport by ship is still one of the largest polluters, with minimal regulation. Local recycling, production and maintenance would help remove a large part of the transport element from the environmental footprint in both directions (Muzi, 2020).

## Safety

Individuals will attempt to carry out repairs on their own either due to limited income, desire for waste reduction, or simply out of interest. Better to provide safe and correct procedures and spare parts, than to rely on hit-and-miss attempts that could damage the product and put public and infrastructure at risk. Having an established repair industry will engender greater oversight of the aftermarket parts supply chain. At present most repairers are aware of cheaper and seemingly equivalent goods coming from less-regulated overseas or “grey” markets. Having official import channels, or better yet, local production, will ensure integrity of products offered for use in repair.

## Quality of Work

Sometimes independent repairers are better than the manufacturers at fixing things. A veteran automotive electrician in their own business, with experience of many vehicles and their idiosyncrasies, will have skills unattainable in a dealership that employs semi-skilled labour. The same could be said for a seasoned laptop technician versus an entry-level glorified shop assistant. Manufacturers providing quality repairs simply because they have access to proprietary information is not necessarily true. Smaller-scale services with access to that same data may actually be more efficient, with faster turnaround (Leitner 2018).

## Community Benefit

Having access to local repair services results in a reduction in transit requirements and encourages local business and employment. Many community benefits follow, including improved access to services for those with mobility limitations. Australians like to support small businesses, and communities benefit from small businesses thriving, as discussed by American Express Australia in their 2015 report *The Economy of Shopping Small: The Future of Small Business*. The history of Australian businesses starting with a strong local presence, and slowly eroding until all that remains is an online portal does little to enrich the community experience or customer confidence.

Additionally, there exists community benefits in teaching repair skills to those who may have been denied access through normal channels, due to social or financial limitations, or for those who have skills but cannot put them to use due to a decline in employment for that field. Niche social projects like community "Men's Sheds", and skill sharing workspaces similar to *The Bower's* Repair Cafés, or the like UK based *Restart Project*, all require access to parts and manuals to continue their work.

It is impractical to ask manufacturers to adhere to a standard where items can be upgraded and repaired indefinitely with relative ease. The PC market has demonstrated that there is no such thing as too-fast or too-big, and evolving methodologies help accelerate development. Maintaining old hardware forever would stifle efficiency in many fields, including life-saving hospital equipment or vehicle safety sensors. But giving customers the opportunity to choose their own path will promote greater corporate responsibility through increased competition, enabling communities, and engendering a fairer and richer Australian society (Berkeley Haas School of Business, 2020).

Regards,
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