

# Intellectual Property and Willingness-to-Pay

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Intellectual Property is often described as a tool to protect competitive advantage of a company.

But what does this actually mean? In the « Blue Ocean » era, this document puts in light what Intellectual Property does on the value proposition curve and more importantly on customers' willingness-to-pay

Having this link in mind, it becomes easier to proactively design an IP strategy by closely working with business stakeholders.



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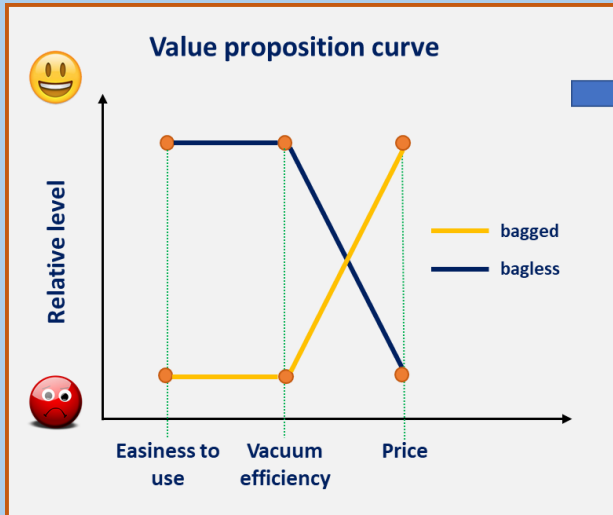


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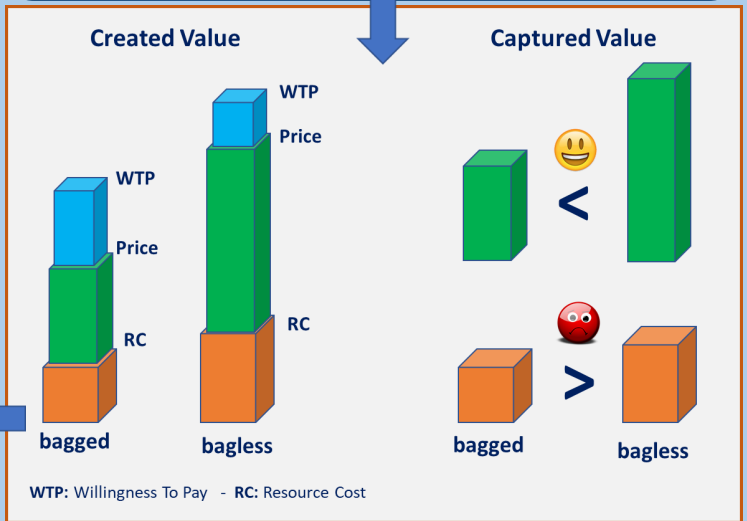
In behavioral economics, **willingness to pay (WTP)** is the maximum price at or below which a consumer will definitely buy one unit of a product. [...] consumer willingness to pay is a context-sensitive construct; that is, a consumer's WTP for a product depends on the concrete decision context. For example, consumers tend to be willing to pay more for a soft drink in a luxury hotel resort in comparison to a beach bar or a local retail store. (source: Wikipedia—[https://en.wikipedia.org/wiki/Willingness\\_to\\_pay](https://en.wikipedia.org/wiki/Willingness_to_pay))

**Use case:** bagless vacuum cleaner vs bagged vacuum

- company X develops the cyclonic technology alleviating the need of bag.
- company X patents the cyclonic technology and is the sole owner. The scope of protection is optimal, design around being impossible .
- company X is the sole manufacturer and distributor of the cyclonic-based bagless vacuum cleaner.



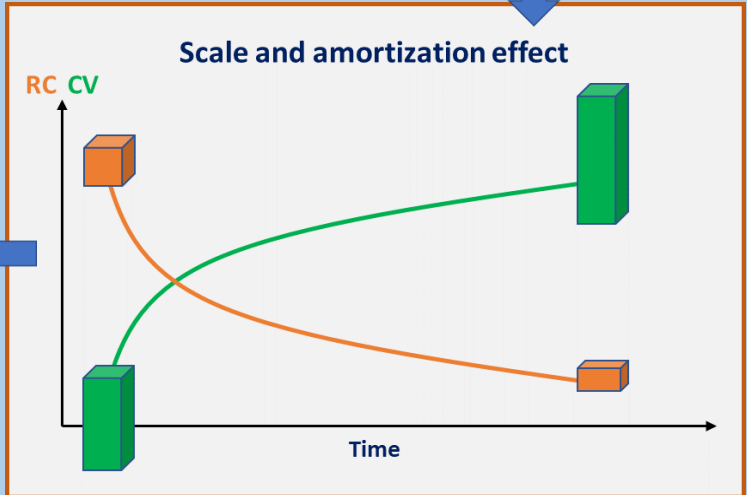
- The patent protects two items of the value proposition curve: easiness to use and vacuum efficiency.
- Those two items are the reasons why customers want to buy a bagless vacuum cleaner over a classic cleaner.



- Those two items thus significantly raise customers' willingness to pay for a bagless cleaner.
- Because a patent is a **monopole on sale and distribution**, the customers are locked by company X. Their bargaining power is thus significantly reduced. Price may be set higher, closer to the customers' WTP.
- The increase of both WTP and price contribute to a higher captured value by company X.

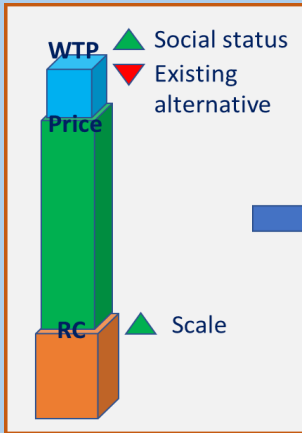
- Because of reputation of innovator, the WTP increases over time (emotional/social status) and thus the captured value by the customer (WTP - price).
- Because IPRs, including patent and trademark, create a **monopole on communication**, the reputation increase is captured only by company X.

- Because of scale effect, resource cost decreases over the time.
- The captured value thus increases.
- Because a patent is a **monopole on manufacturing**, the increase in the captured value over time is captured only by company X.



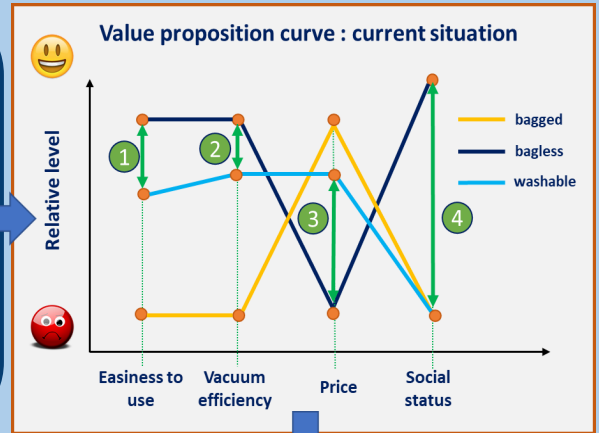
**Use case:** market move in the vacuum cleaner sector

- A new patented vacuum technology has been designed by company Y. It is a washable bag made of a new fabrics that highly enhances suction performances. To use it, classical bagged vacuum has been slightly modified. But relying on existing highly scaled vacuum manufacturing, the resource costs of company Y are low.
- Company X still innovates in the cyclonic technology and files improvement patents. However, its base patent will expire in 5 years.
- With time being, company X's bagless vacuum became a social status object.



- Willingness to pay to drop because of the washable bag.
- Company X's patent does not fully protect the WTP anymore.
- Marketing study shows the WTP is heavily supported by the social status proposal.

**Question: are there some actions or recommendations from the IP department?**



- **Gap 1** to be maintained because it relates to the very nature of the technology. Customer will always have to wash the bag, waiting for it to dry before reuse .
- However, a strong lead for improving easiness to use has been identified, namely cordless cleaner. But batteries are not part of the core capabilities of company X.
- A business et scientific intelligence analysis, including a patent landscape, shows the best strategy is a technology procurement one from company Z.
- The IP department **rapidly organizes and negotiates cordless technology procurement to sustain the next move in easiness to use.**

- An appropriate IP strategy consists in securing any increase of the positive gaps and decrease the negative ones.
- Either you move your own value proposal and/or you make the competitor's one move.
- **But you always think relatively to your competitors' offering.**
- **Let's review each of the VP curve item.**

- **Gap 2** increases over time since company X invests in vacuum efficiency R&D.
- Gap 2 may also increase over time if company Y stops or slows down its innovation in washable bag.
- It is decided that IP department will achieve this goal by **attacking company Y's patents** : the washable bag cleaner falls in the public domain or is easily designed around. With time being, it is copied and replaces the bagged vacuum as the new basic standard. Company Y revenues fall and it shall allocate resources to counter its direct competitors. Plus, any attempt to gain traction by proprietary innovation on washable bag will be counter by Company X's attack on Company Y's patents.

- **Gap 4** - After an IP portfolio review, **current design** is not backed up by strong IP. The design is "cool" but not that much novel and mainly driven by functional constraints.
- As the WTP of customer is mainly driven by social status, as the marketing shows, the **uniqueness of the cleaner** shall be reinforced.
- IP department recommends a **brand-new design, able to generate stronger IP.**
- **With time, design becomes a proposal by itself.**

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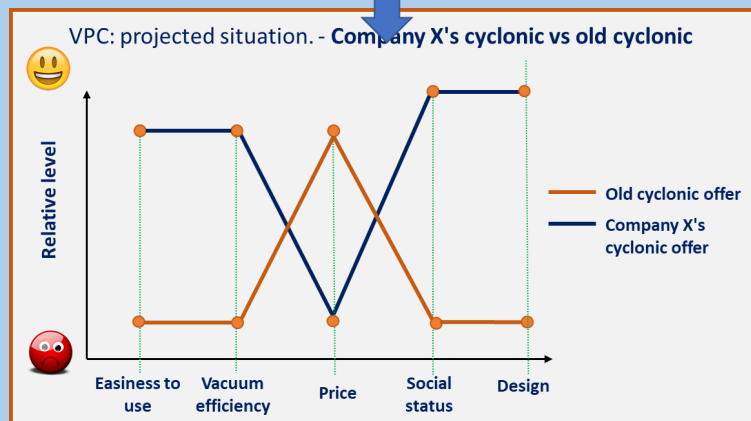
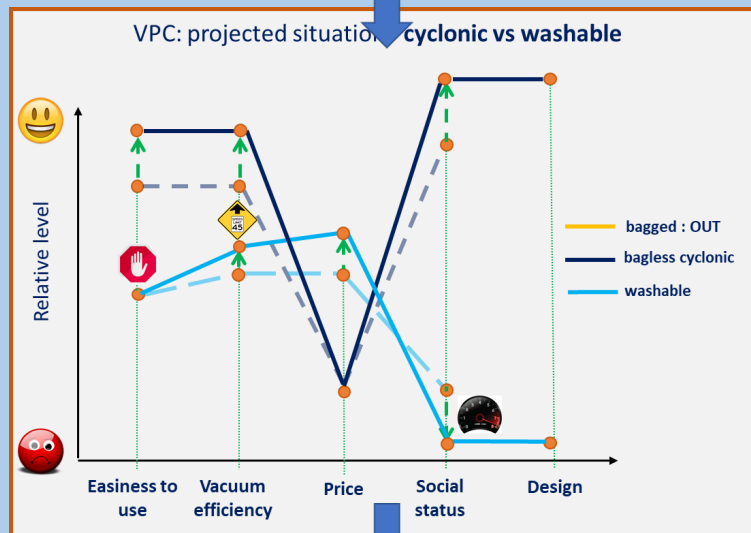
- **Gap 3**—Price is not that much movable because it is an important component of the social status.
- **It is decided not to leverage price for the moment.**

However, price may become soon an issue that shall be anticipated.

- As the base patent is about to expire, the **cyclonic cleaners are likely to be marketed by many actors at lower prices**, which may strongly dilute the status social value.
- It is decided with marketing to control the number of new entrants to weaken the soon-to-come offer switch.
- **The basic patent is licensed to some selected incumbent competitors.** New entrants, if any, will be likely dragged into a price war on an old version of cyclonic technology. Company X will be preserved from it because of its market positioning toward high revenues. Depending on the case, IP department may either fully open its base technology.
- To anticipate a price war not efficient enough, the IP department is **prepared to license some, but not all, wisely chosen improvement patents**. By doing so, company X places its licensees' offering between its own offering and the cheap ones. The IP licensees will act thus as a defensive line.

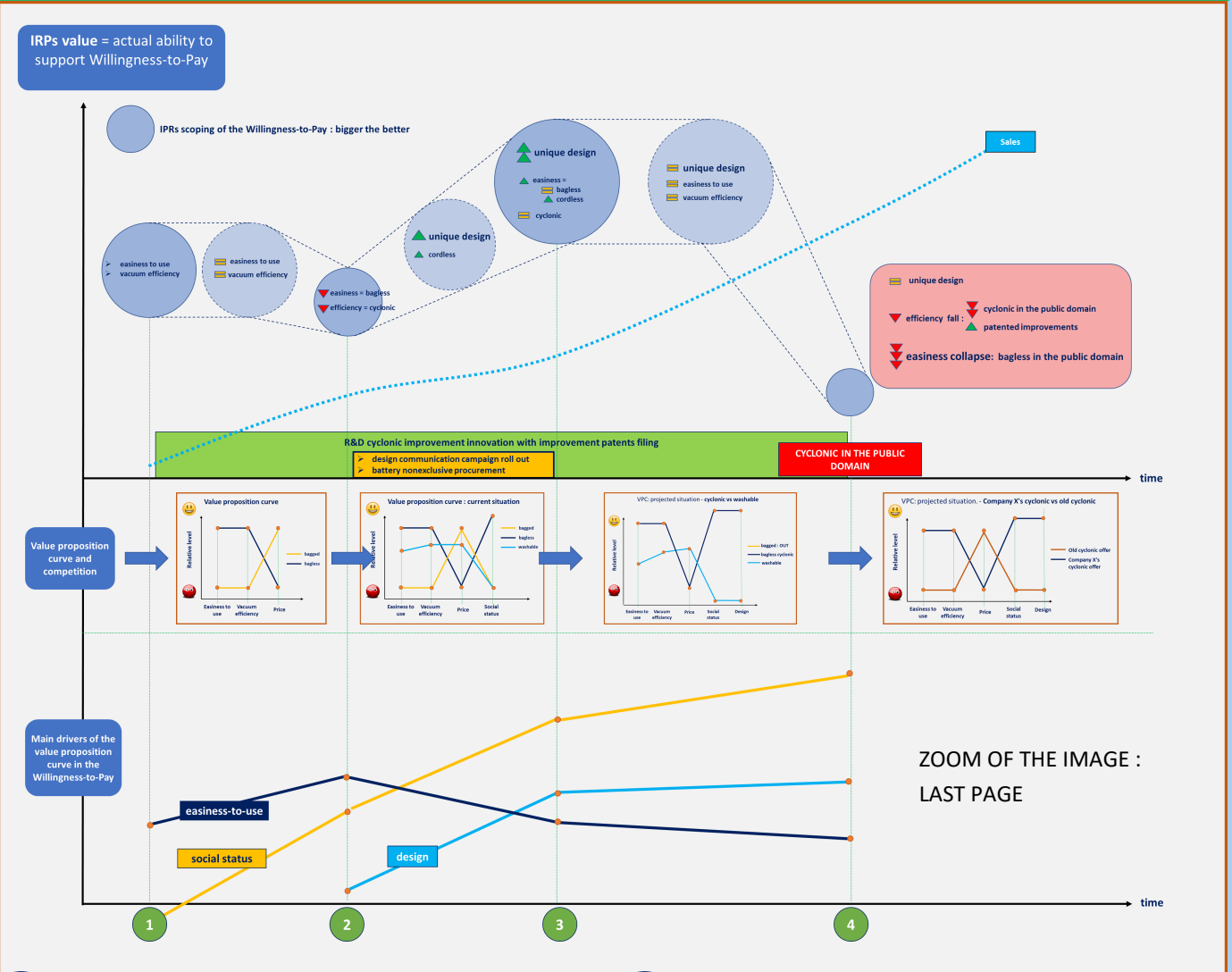
**A possible scenario among others, based on social status as main driver, is thus**

- Keep on patenting cyclonic technology improvements. Sort your portfolio for an agile future licensing.
- Attack company Y's patent to open its technology with the goal of lowering costumers' WTP regarding the washable bag .
- Launch a design campaign to generate strong IP and secure the status social value.
- Consider the design as an explicit value proposition and act in consequence.
- License the base patent to wisely selected competitors in order to pave the way for a war price on old cyclonic technology, thereby securing the status social value. Watch with scrutiny the market and prepare yourself to a quick licensing campaign based on your already sorted portfolio.
- As soon as possible, secure cordless technology procurement to sustain the easiness to use.



**Use case: IP value - bagless vacuum cleaner market**

- **Company X carries out the IP strategy detailed in the former poster.**
- **Question: what is value over time of the patent portfolio on company X's commercial offer?**



**1**

- IPRs (base patent) are **disruptive**: they scope a **disruptive technology** (cyclonic) supporting a **disruptive market value** (easiness-to-use):
  - if a cleaner carries out the cyclonic technology, then the cleaner is a bagless one, then it is easy-to-use.
  - if a cleaner is easier-to-use, then it is a bagless one, then it carries out the cyclonic technology.
- **IPRs scope is thus optimal because it locks the main driver of the Willingness-to-Pay.**

**2**

- **The easiness-to-use domain expands through the washable bag.**
- IPRs are not optimal anymore: they do not scope the whole easiness-to-use domain:
  - if a cleaner carries out the cyclonic technology, then the cleaner is a bagless one, then it is easy-to-use.
  - **BUT if a cleaner is easy-to-use, it does not necessarily carry out the cyclonic technology, but for instance the washable one.**
- **The value of IPRs portfolio thus shrinks.**

**3**

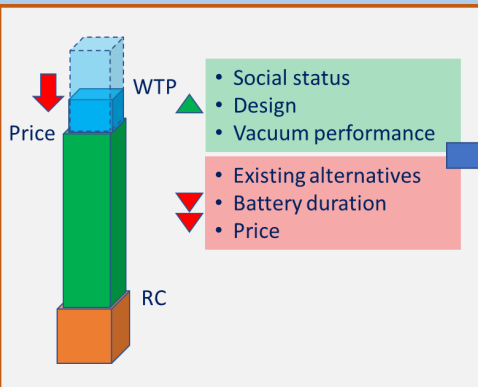
- As it is frequently observed, some values become negative with time being. That is the case of easiness-to-use: if the easiness-to-use falls, so does the WTP. But if the easiness-to-use incrementally raises it has little to no effect on the WTP.
- The main driver of the WTP is now the social status, a part of which is the uniqueness of the design.
  - The efficient communication campaign made a strong customer identification with company X's products through "uniqueness" of the design.
  - **This uniqueness is protected by design models, brands and copyrights.**
- This switch in value driver is captured by the IPRs through the protected uniqueness of design.
- **The value of IPRs portfolio thus expands.**

**4**

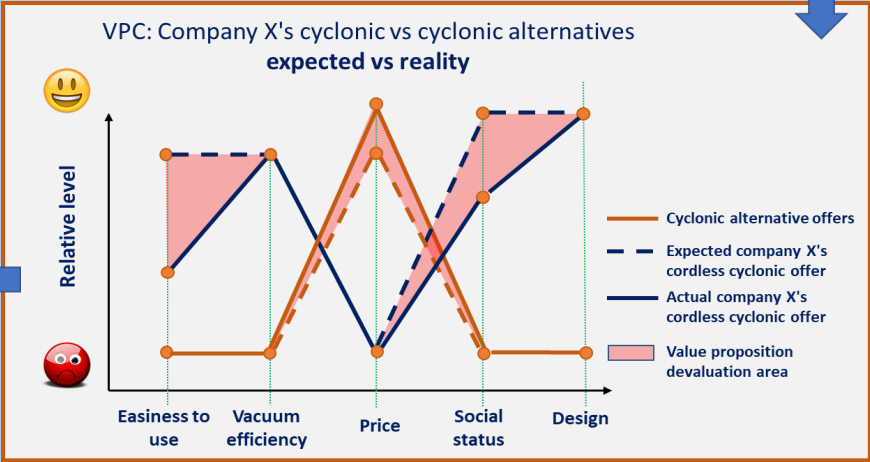
- The base patent has expired. Company X has no more IPRs scoping the easiness-to-use value. Anyone may sale cyclonic technology and thus bagless cleaner and thus propose this easiness-to-use value to customers.
  - The fall of IPRs value regarding easiness-to-use is however a bit slowed by the license on the battery technology.
- The IPRs scope regarding the vacuum efficiency has also shrunk through base patent exhaustion.
  - The fall of IPRs value regarding vacuum efficiency is slowed down by improvement patents.
- The IPRs regarding design have not changed.
- **The overall value of the IPRs portfolio has thus shrunk a lot.**
- **If the vacuum efficiency does not become the main driver of the WTP, increasing patent portfolio on cyclonic technology will be of no help on WTP.**
- Note that at the same time, the patent quality index may reach the roof.

**Use case: negative value proposition** - example of the bagless vacuum cleaner sector

- Company X' launched its new cordless cyclonic vacuum cleaner. Unfortunately it is not as successful as expected. After a Voice of Customer pool done by the marketing department, company X learns that customers feel the battery does not last enough for an everyday usage even though former marketing campaign asserted the contrary.
- The easiness-to-use proposal is lower than wanted.
- The base patent on cyclonic technology has expired. As expected, many new offers embedding the older version of this technology have emerged and price war is raging.

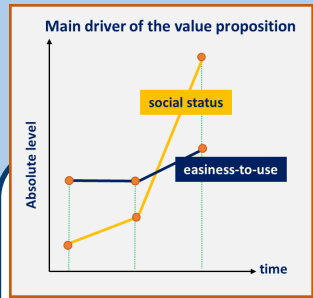


- The easiness-to-use is not as high as expected.
- It negatively impacts other items of the value proposition curve: the social status requires a flawless product, which is not the case anymore because of the battery issue.
- **The differentiation of company X product over competitors' ones is not as high as expected so do the sales.**
- More problematic: the social status value is under heavy pressure.



- Company X shall react. But**
- The battery duration doubles on average every 5 years. It may expect a solution from company Z only in the mid-terms.
  - R&D identifies a promising lead: controlling the vacuum power based on the nature of the ground and of the dirtiness, thereby sparing the battery.
  - BUT on average an internal R&D project takes 3 to 5 years.
  - **Mid-terms (5 years) is too long.** Marketing fears a further fall of company X's shares.

- Question: How the IP department may help to speed the innovation cycle?**
- **Company X 's IP default strategy on its core assets is a closed one:** company X fully controls both the innovation process and the innovation outcomes thanks Intellectual Property.
  - The circumstances are exceptional: the IP department assesses whether the default strategy is appropriate
  - To do so it **assesses the impact of potential IPRs monopolies on the Willingness-to-Pay** of the customers

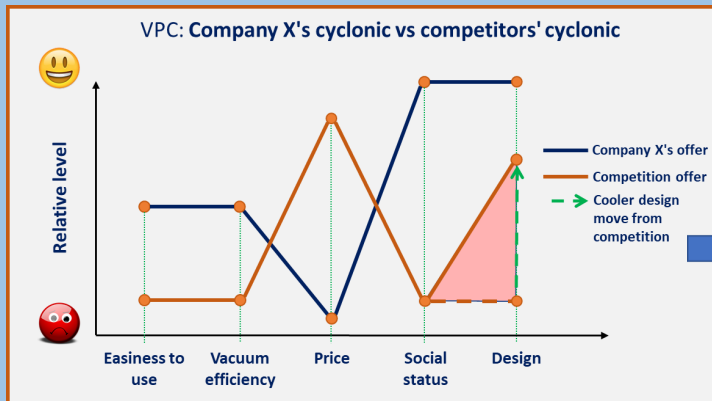


- With time being, the main driver of the Willingness-to-Pay became the social status, over the easiness-to-use.
- **BUT** the easiness-to-use is still mandatory for costumers. An issue on this item negatively impacts their Willingness-to-Pay but a positive outcome hardly produces any increase of it.
- **According to the marketing department, even if competitors adopts the very same technology for their cleaners, it will not change that much the Willingness-to-Pay.**

- Accordingly, the IP department states that it is ready to support any type of innovation, including **fully open innovation if it speeds innovation.**
- It will accompany it and helps to **structure the technology implementation in order not to not jeopardize future proprietary developments. The IP department will be thus involved in the determination of :**
  - **the software development strategy, and**
  - **the business model architecture.**
- **In parallel, IP department will support any internal project, partnership and procurement** and patents any development.

**Use case: tracking the willingness to pay with patent portfolio. An serendipity case** — example of the bagless vacuum cleaner sector

- Company X' s first patent portfolio was optimal as it first locked the main drivers of the willingness to pay (see former posters). Then customer WTP changed and so did those drivers (now design and social status). Unfortunately they are now of out invention reach.
- Plus the patent portfolio value is on a slippery slope. First the base patent has expired. Second company X engages its main R&D resources on vacuum performances to stay ahead competition on that point but also on battery control to sustain easiness to use. No new disruptive patent has been filed for years and the patents are more and more incremental.
- In the meantime, the direct competitor worked hard on its design and has launched customer advertising campaign toward high-income younger segment.
- **Question: how may the IP department react to get a more relevant patent portfolio?**



- There is a link between technology and aesthetic: if the first constrains the second too much, getting an industrial design is unlikely.
- One role of the IP department is thus **hunting any opportunity to free aesthetic from technology.**
- Hence, the patent attorneys **question any new inventions regarding its impacts on size, shape, element arrangement, material...** and more generally on embodiments freeing aesthetic.

One day, an inventor contacts the IP department with the following invention:

- **problem:** if a ground gets dirty with too many big particles, one observes a low vacuum efficiency on the fine particles.
- **solution:** two cyclone chambers are provided, a first one having a lower efficiency to first sort the big particles and lodging in a concentric manner the second chamber. The second has a higher efficiency to sort the fine particles.
- in a optional embodiment, holes are provided in the casing for inputting supplemental air the second chambers in order to maintain the air flow along the whole air path.

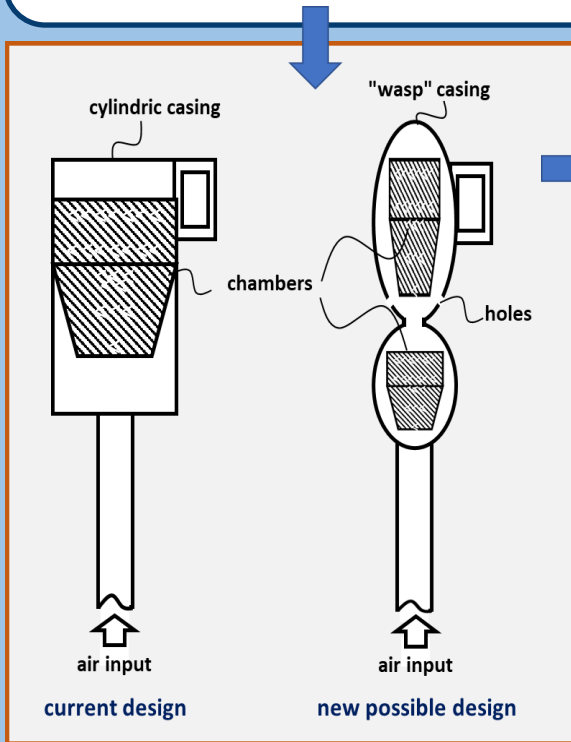
- Without particular attention toward aesthetic, a new patent scopes only « **a first cyclone chamber lodging a second cyclone chamber, with the outermost chamber having a lower efficiency than the inner most chamber** »
- With the whole teaching of the patent focusing on particle size, the dirtiness of the ground and the advantage of the invention to maintain high vacuum efficiency for tiny particles in presence of big particles.

**By focusing on shape,** the patent attorneys help the inventor to figure out the following features:

- no need for a chamber to lodge another one: they may be spaced apart in any manner.
- diameters of the chambers may be equal or different, and vary in a large extent.
- but to maintain air flow between spaced chambers, and thus the vacuum performances of all the chambers, holes in the casing must be provided between the chambers.

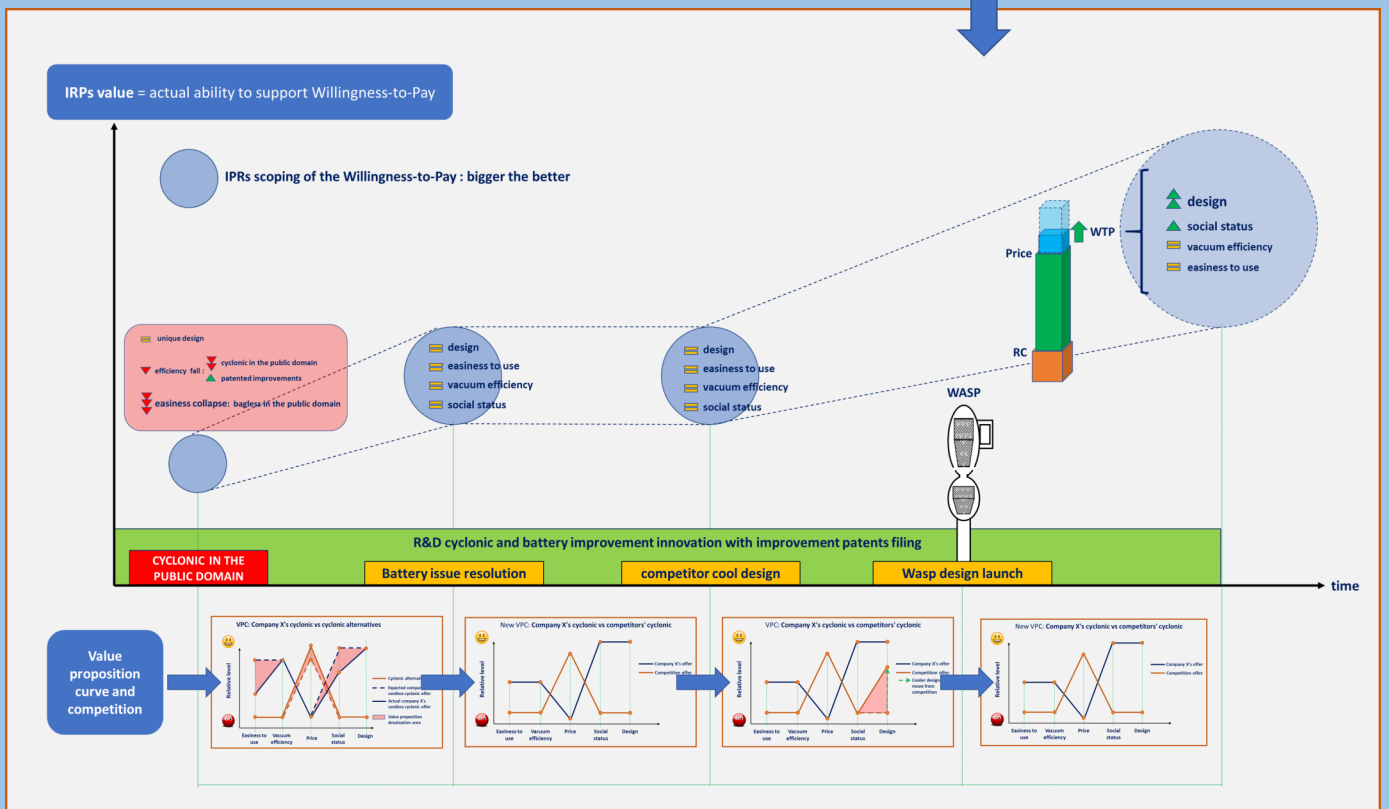
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- Currently, the shape of the casing is mostly determined by the shape of the cyclone chamber: its main part is cylindrical.
- For a same vacuum efficiency, it is now possible to have multiple chambers of different diameters.
- New designs are possible.



- Another patent is filed scoping « **at least two cyclone chambers arranged in series along the air path, with holes done in the casing between the chambers.** »
- With the teaching of the patent focusing on particular size and shape of the cyclone chambers enabling different shapes and sizes for the air path and thus different casing.

- The **patent portfolio value has increased** since it now scopes more efficiently one of the main driver of the WTP, namely the design:
  - if the cleaner has a non cylindrical design, then it carries out at least two chambers with holes therebetween;
  - if a cleaner carries out at least two chambers with holes therebetween, then its design may be non cylindrical.
- **IP department recommends a brand-new design taking advantage of this new aesthetic freedom.**
- **A new "wasp" shaped cleaner is successfully marketed .**





IRPs value = actual ability to support Willingness-to-Pay

IPRs scoping of the Willingness-to-Pay : bigger the better

