

Group 5 Pui Ching Middle School, Macau

Theme2 : Relation between applications of robots and their performance

2)Service use

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Have you ever thought about
lifting up an object without using
any strength?



I've always dreamed about using robotics to make our life more convenient and advanced.



Our theme...

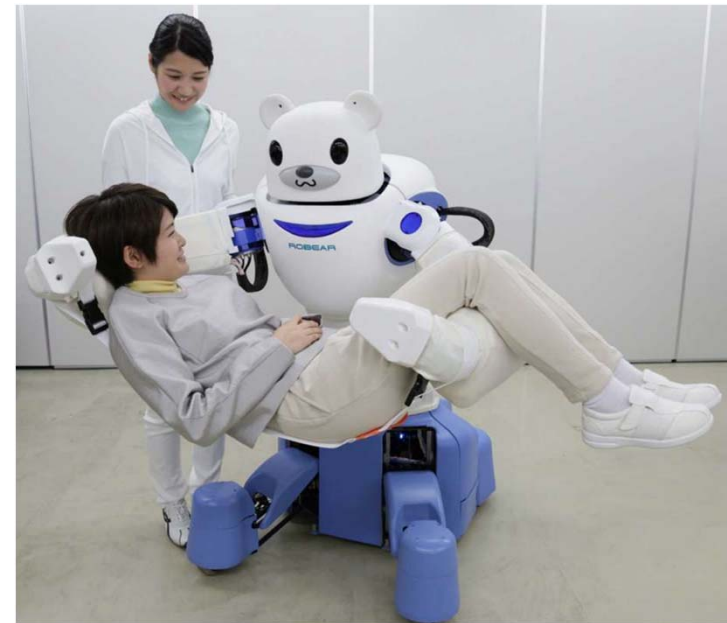
Relation between applications of robots and
their performance...



2)SERVICE USE

To us, service robot...

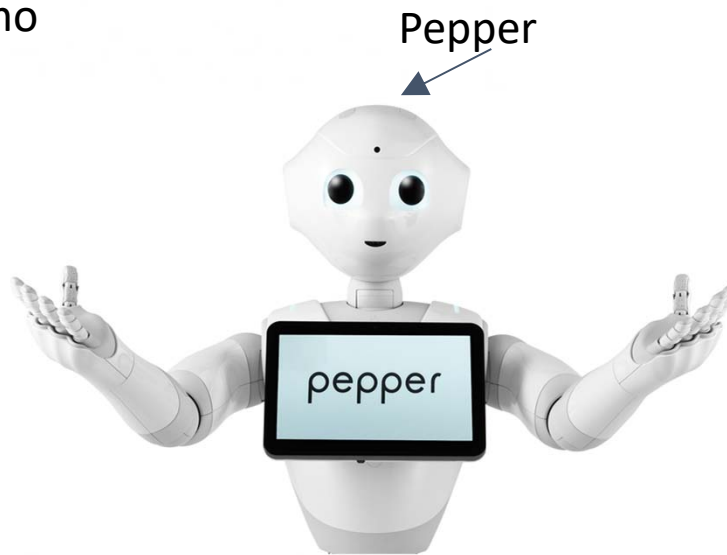
- . Help human to do something that may **harm** us.
- . **Reduce the burden** of our work



Common service use robot...



Asimo



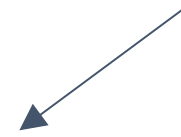
Pepper



Furo

Workers of delivery...

- . lumbago
- . disc herniation



Solution Example

Using two ropes



When two people carry large items such as furniture. Because of the handling process and the torque will be unbalanced, make the furniture tilt, At this time, people will go to force it to rebalance, so it will be very laborious.

Artificial

As we can see, this product is used to support humans to live up heavy objects, so it would not be replaced by anything. Without humans, this product cannot be used.



Muscle suit



- . standard device (assisting force up to 35kgf)
- . light-weight device for women and the elderly (assisting force up to 25kgf)
- . devices used for outdoor (assisting force up to 25kgf)



Principle

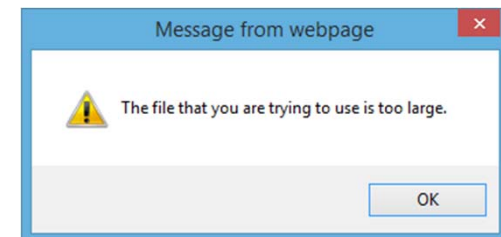
- 1) There have artificial muscle devices to provide effective assistance
- 2) Suitable for use in factories, care and welfare facilities and other indoor use
- 3) Control switch can easy control air pressure supply to artificial muscles via expiration



Problem discovered



- . **Weight** and **installation** are too large. Now their common goal is to make the installation **lighter and more micro**.
- . They have to be **connected to the fan behind** them, **dragging a pipe behind them is inconvenient**
- . Service range is limited because users are usually **elderly people**



Our experience video



Investigation

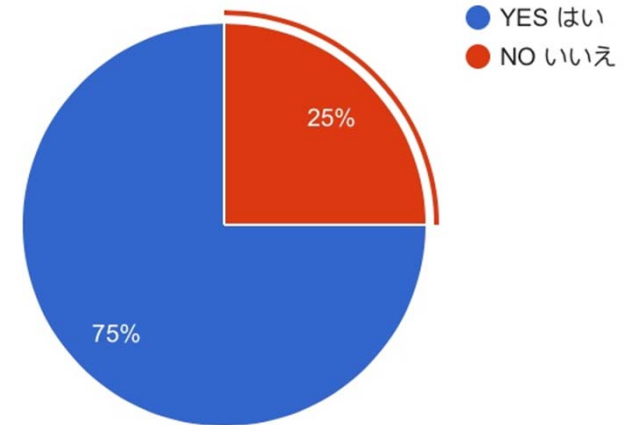
We had interviewed some of the users how they felt after trying this product ;



Have you ever heard of this product? この製品を聞いたことがありますか？

Summarise :

It is well know in our society.



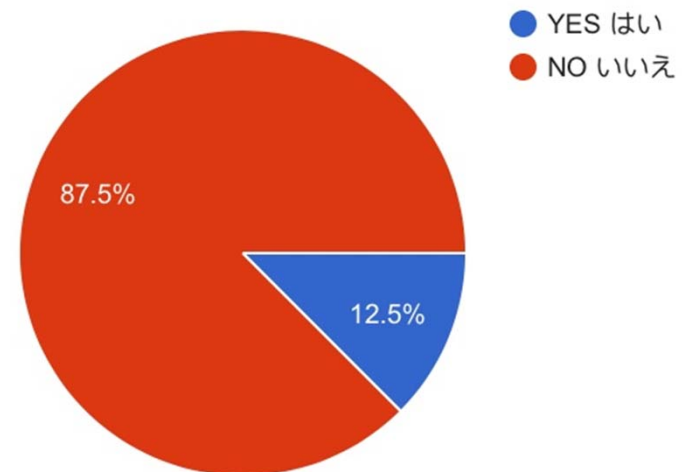
Investigation

We had interviewed some of the users how they felt after trying this product ;

Summarise :

Although this product is good, around 88% people don't want to get one. We speculate that this product doesn't have too much impact to our life.

Do you want to get one?
この製品が欲しいですか？



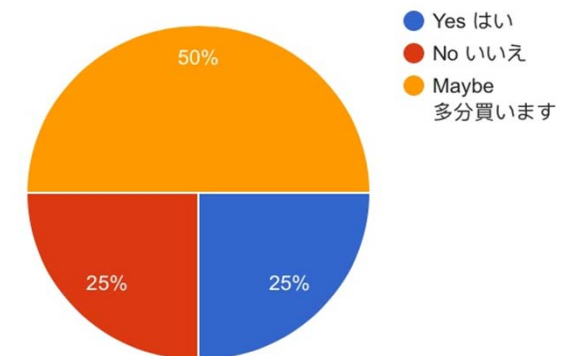
Investigation

We had interviewed some of the users how they felt after trying this product ;

Summarise :

This product brings others an 'expensive' image that people cannot make up their mind to buy it.

After considering the cost ,Practicality,comforting and else,will you still want this product ? 価格,実用性,コンフォート...様々な条件を考えると、まだそれが欲しいですか？



. Most people do not really need this product
It is a well known product

. This type of product is mainly aim on old age group
Bigger market in old age group

#NEED 🥰



Voice after experienced



: The weight of the objects is not really reduced by the aid of the machine, but rather the hand is heavier.



: The movement becomes harder than usual and requires a helper to wear it. Very inconvenient to wear.

Companies's opinions - 1



: use an artificial-muscle which is invented by themselves to produce this product

: a little pressure in order to produce a force over 200kg, but its integration isn't perfect

Companies's opinions - 2

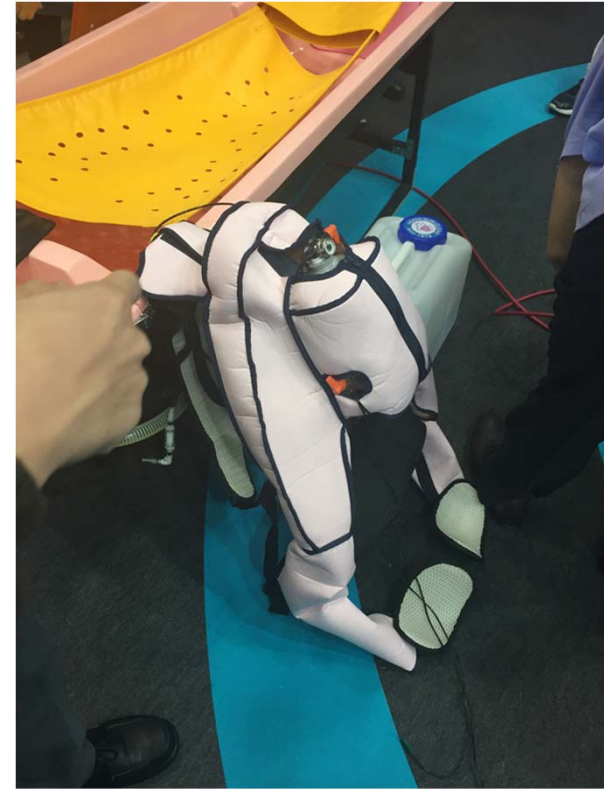


: use an electronic-motor to produce this product

: make their product becomes more safety

Future Development

- . Promote to public
- . Let more people try and use this product
- . Making it lighter and more convenient



Conclusion



In conclusion...

Benefits : the product can be operated by one person, more safe

Disadvantages : needs regular charging, now cannot be made to independence, safety is lower than the safety of electricity



THANK YOU!!!

**THANK
YOU!**

