Designing off-screen interaction

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STARRYWORKS inc.	http://www.starryworks.co.jp/
Darkness Inc.	http://death.co.jp/
BUTTON INC.	http://btn-inc.jp/

What is the role of interaction?

1. Making the function easy to understand.

2. Improving the quality of the experience.

ex:

Comparing between web pages with interaction and without.

http://kimulabo.jp/daigei/2016/example001.html

http://kimulabo.jp/daigei/2016/example002.html

When you move the cursor over the button,
then the button compresses.

So you can understand that you can click it.
And you feel like you are touching a real button.

When you click the the button,
then the page smoothly scrolls down.

So you can know that you moved to the lower part of the page.
(You can understand that you did not jump to another page)

Usually, interaction design
is only an effect for a function.

But sometimes
the interaction itself is the main purpose.

Especially in off-screen content.

How we design off-screen interaction

When we plan off-screen interactive content,

First, we think, “When you _____, then _____.”

The gap between the action and the reaction should be as big as possible.

“When you _____, then _____.”

natural and easy action

surprising and extraordinary reaction

This gap makes the experience look like magic.

ex:

When you draw a picture,
then it comes alive.

doodle zoo

by coconoe inc
http://doodlezoo.jp

ex:

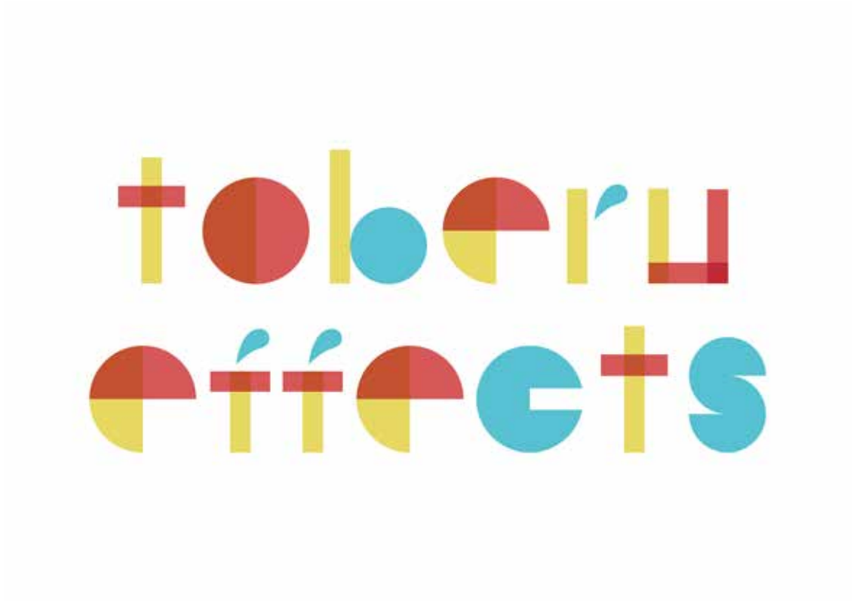
When you move,
then snow blows.

Magic Snowdome

by STARRYWORKS inc.
http://www.starryworks.co.jp/works/2014/12/17/post-23.html

ex:

When you jump,
then water shoots from a fountain.



toberu effects

by d-Labo (Osaka University of Arts and dentsu inc.) / STARRYWORKS inc.
https://www.facebook.com/kjkmr/posts/10206456034871993

ex:

When you draw a picture,
then it becomes a musical instrument.

Craft Gakki

by STARRYWORKS inc. / Coconoe Inc.
http://japanese.engadget.com/2015/10/12/craftgakki/

ex:

When you turn the page of a book, then sound plays and the color of lights change.

PLAYFUL BOOKS

by STARRYWORKS inc.
http://playful-books.com/

ex:

When you scratch a vinyl record,

then lights whirl and your face spins

DANCE

by STARRYWORKS inc.
https://vimeo.com/121873176

ex:

When you touch a business card,
then blood appears.

Business card of Darkness Inc.

by Darkness Inc.
https://twitter.com/death_co_jp/status/616831325148844032

It may seem impossible at first.

But if you know what technologies are available, you can realize your vision.

Input and Output devices

An interactive content
consists of input and output

“When you _____, then _____.”

Input

Output

To realize your vision, you don’t need skills.

But you need knowlege of latest technologis.

Input devices / technologies

- Camera
  - Face detection
  - Face recognition
  - Eye tracking
  - Motion detection
  - Depth camera
- Microphone
  - Speech recognition
  - Pitch detection
- RFID
- GPS
- Touch sensor
- Range sensor
- IR sensor
- Supersonic sensor
- Distance sensor
- Pressure sensor
- Flex sensor
- Luminance sensor
- Accelerometer
- Gyro sensor
- Temperature sensor
- Magnetic sensor
- Pulse wave sensor
- Myoelectric sensor
- ECG sensor
- EEG sensor

Output devices / technologies

- Video
  - LCD Display
  - Projection
  - Laser projection
  - Head mount display
- DMX Devices
  - Stage lighting system
  - Moving head
  - Fog machine
- Motor
  - Wheel
  - Robot arm
  - Fan
  - Vibration
- Audio
- Haptic device
- Light
- IR/UV
- Pump
- Compressor
- Electromagnet
- Solenoid valve
- Home electronics

If you are a programmer, you can develop interactive content with these devices using C++, Javascript or Python etc.

(Arduino, Raspberry Pi, Edison etc.)

Even if you are a designer or it is too hard to learn them, you should know about these technologies.

If you don’t know these technologies,
your idea will never be realized.

But if you know these technologies,
you can find the way to realize your idea.

If you know these technologies,
You can google to learn more about them.

If you know these technologies,
You can talk to someone with skills.

Let’s put ideas out, And make it real!

If you are a designer or programmer, it is not as difficult as it seems.

Thank you :)