Team 9

Reading Log Presentation

Prototyping

: alternative systems development methodology

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Ⅰ. Definition of P.T.

It has lots of definitions.
But all definitions have common things like these.

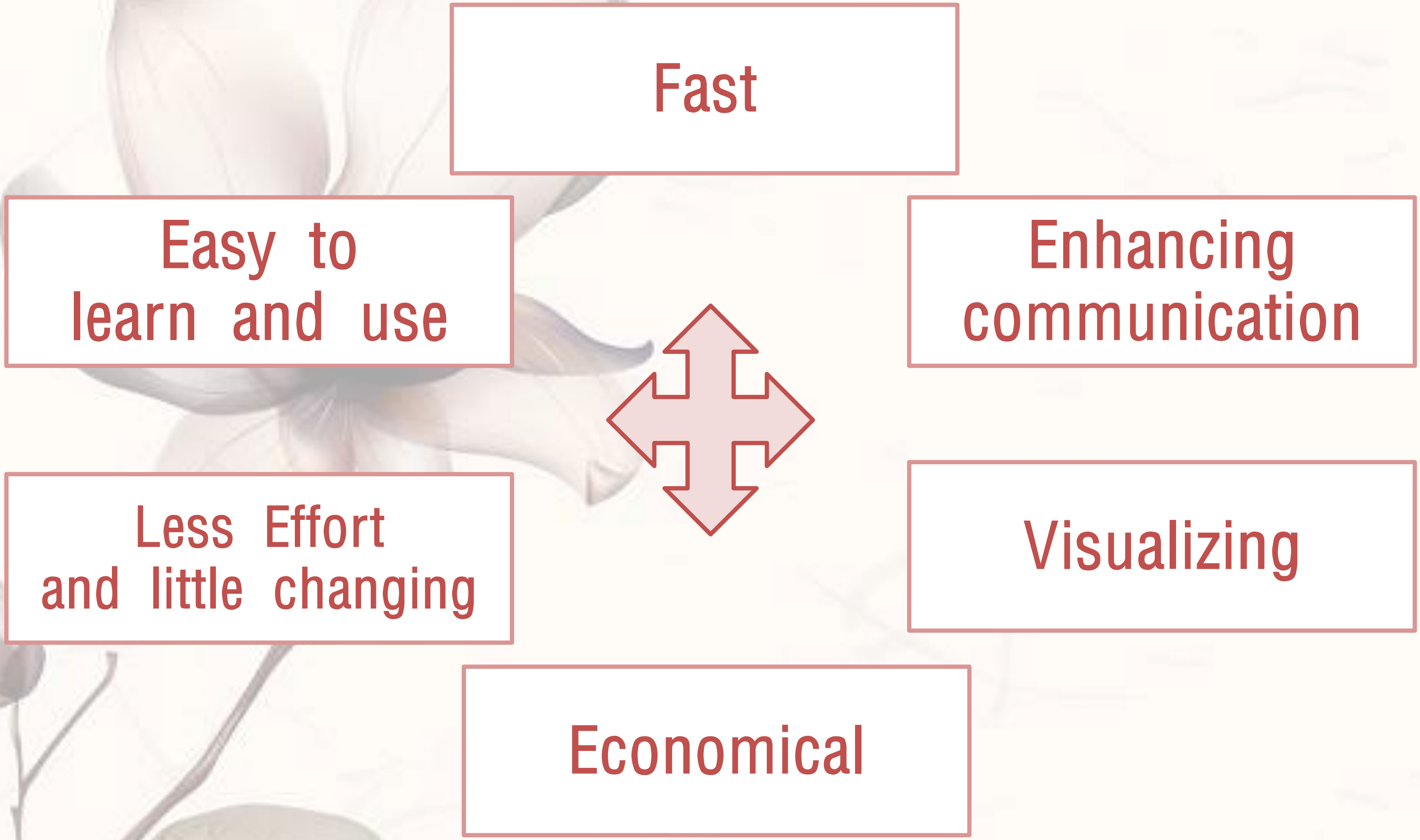
1. Prototyping is seen as a model of the final system.

2. Prototyping should focus on user involvement.

3. Prototyping produces an information system faster than the traditional life-cycle approach.

To sum up, a developing system process based on Prototyping is
Quick
Economical
Aiming on user's needs.

Merits of Prototyping



Fast

Easy to learn and use

Enhancing communication

Less Effort and little changing

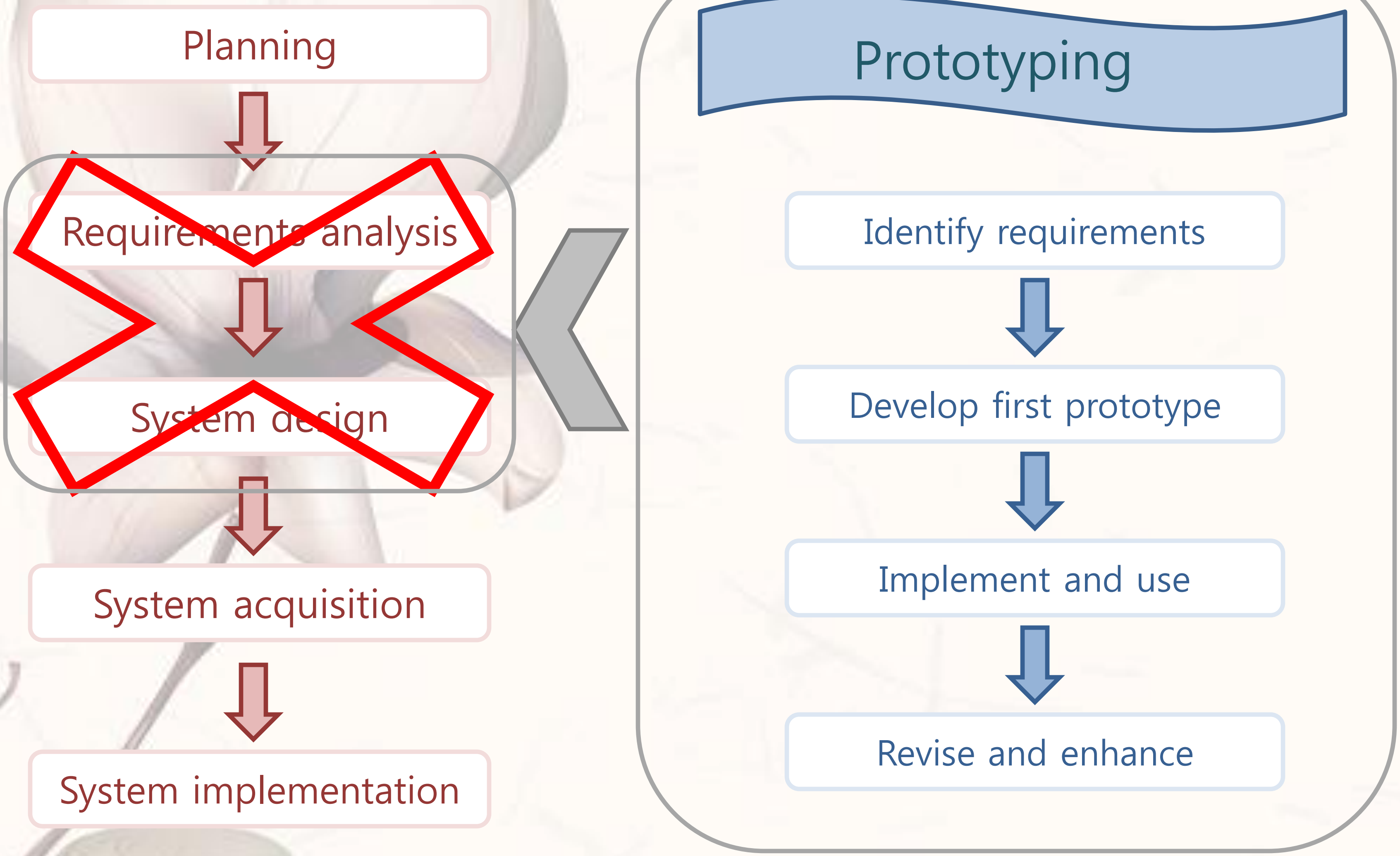
Visualizing

Economical

Traditional method vs. Prototyping method

Traditional method	Prototyping method
Static graphic	Dynamic graphic
Focused on developer	Focused on user
Difficulty communication	Easy communication
Long delivery time	Short delivery time

Traditional SDLC



Planning

~~Requirements analysis~~

~~System design~~

System acquisition

System implementation

Prototyping

Identify requirements

Develop first prototype

Implement and use

Revise and enhance

Demerits of Prototyping

1. User’s expectation becomes high.

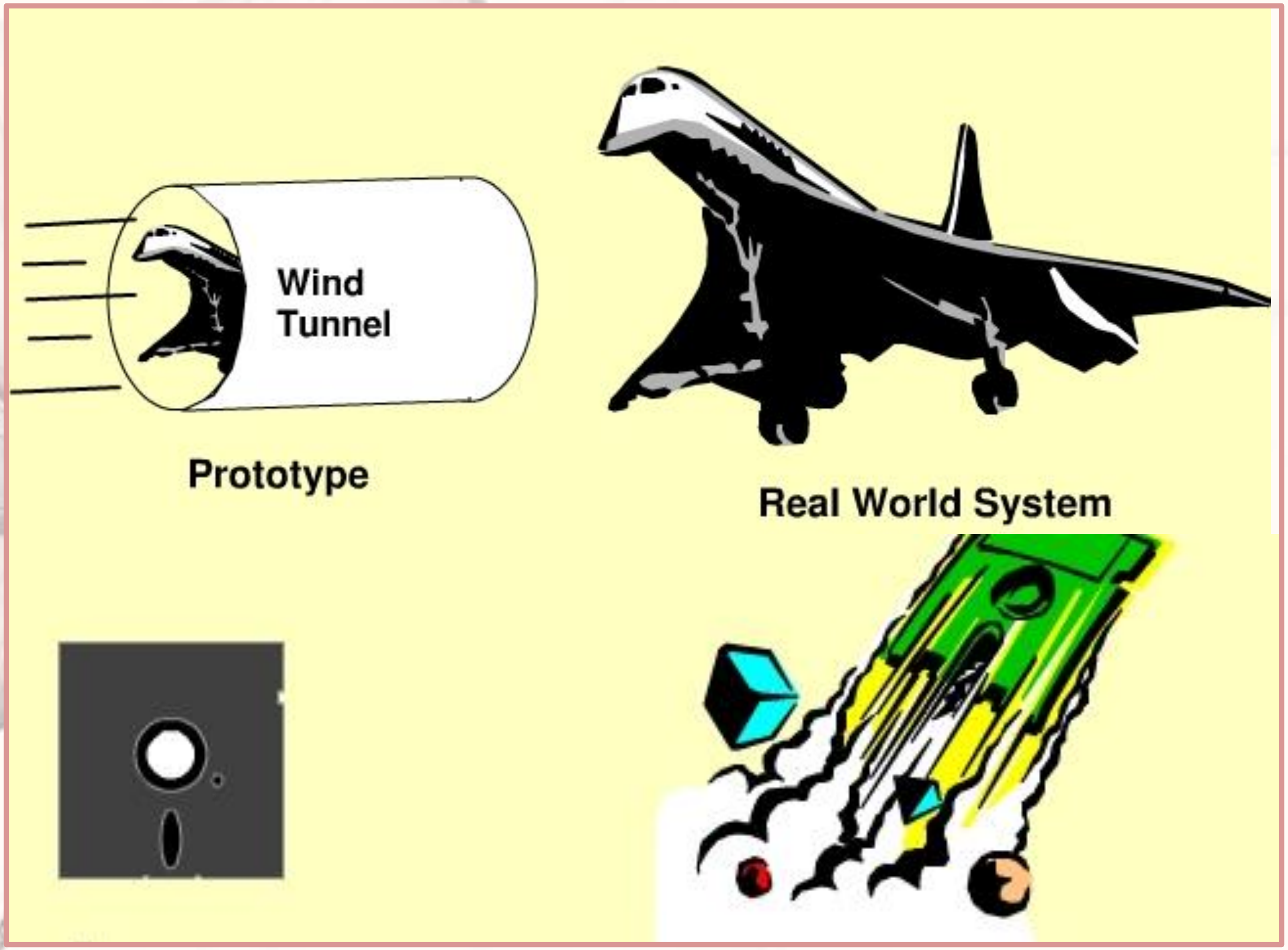
2. User can regard Prototype as the finished system.

3. If someone requires documents of the middle steps, it is hard to provide for him.

4. Encourage end-user to compute.

5. Impatient analysis

Ⅱ. Actual cases of Prototyping



Virtual System Real World System

Rationale for Prototyping

Concise understanding of user's needs

∵ User can't require distinctly.

Dynamic Graphic

∵ Dynamic Graphic can impress on user effectively.

Easy Communication

∵ System development should be focused on user’s requirements.

Rapid

∵ Slow system can lead backlog for user.

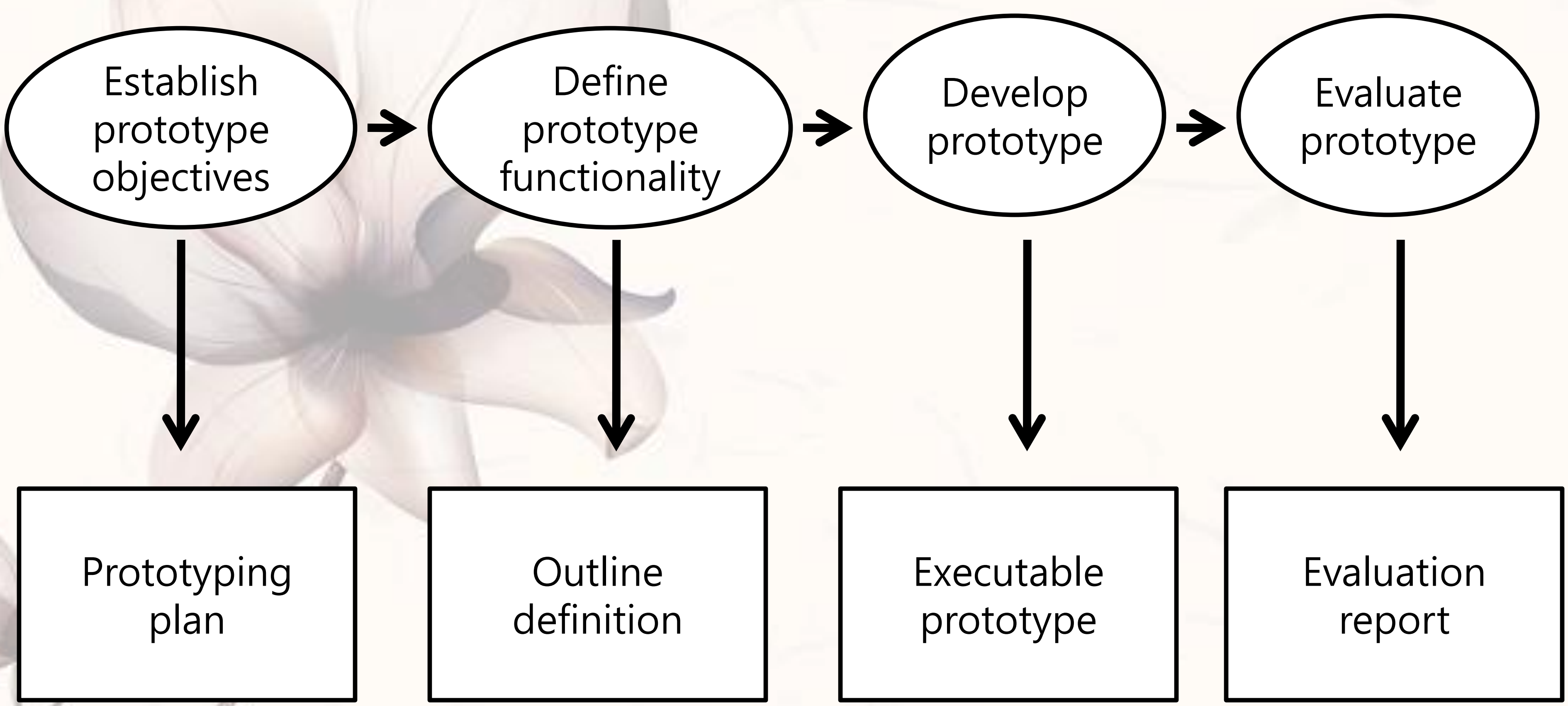
Human-Factors Guidelines

Human-Factors Guidelines

Not only mechanical also human

- Know users.
- Use selection not entry.
- Make the system behave predictably and unobtrusive.
- Use meaningful error messages and fail-safe system.

General process of Prototyping(Primative way)



Establish prototype objectives

Define prototype functionality

Develop prototype

Evaluate prototype

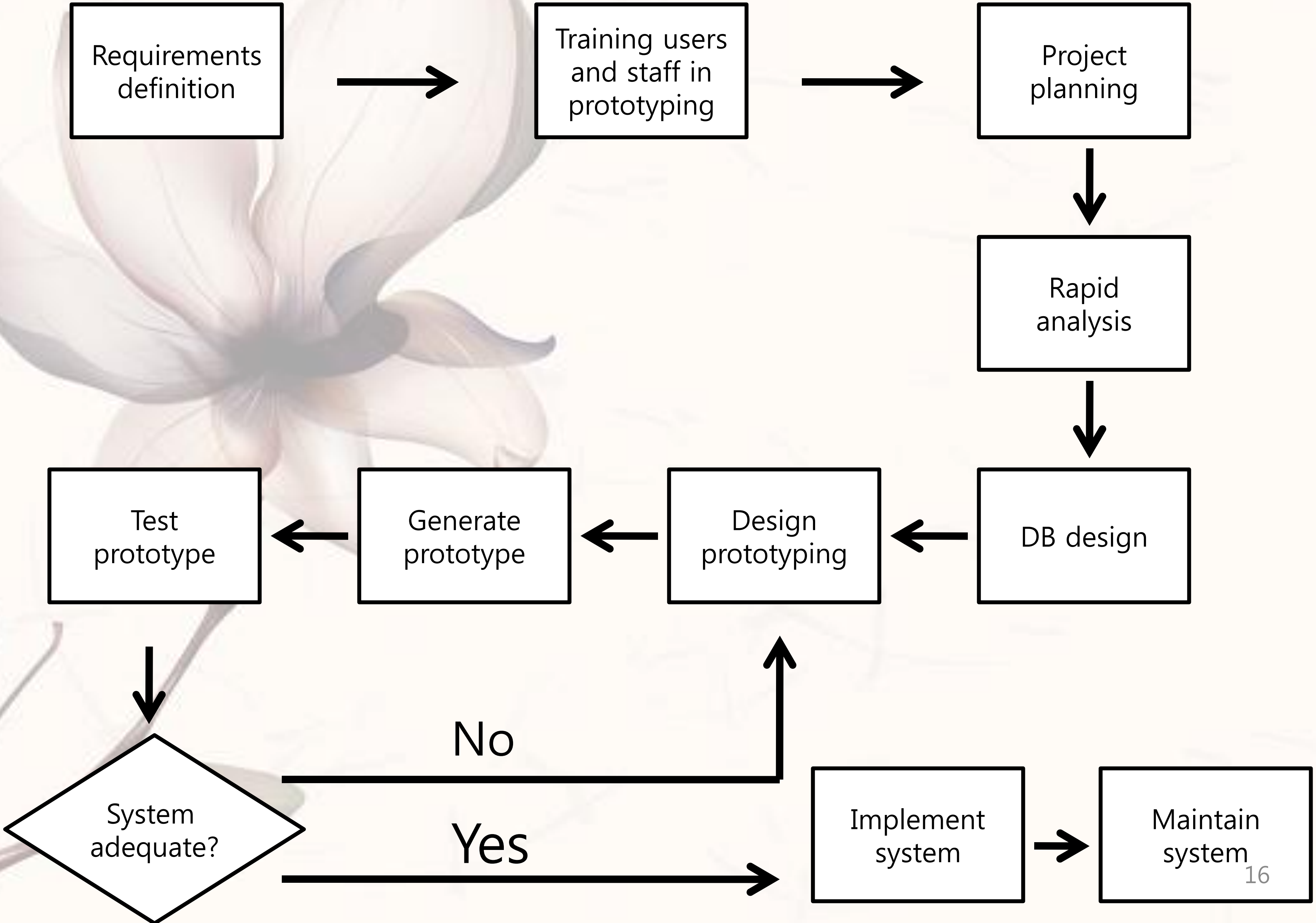
Prototyping plan

Outline definition

Executable prototype

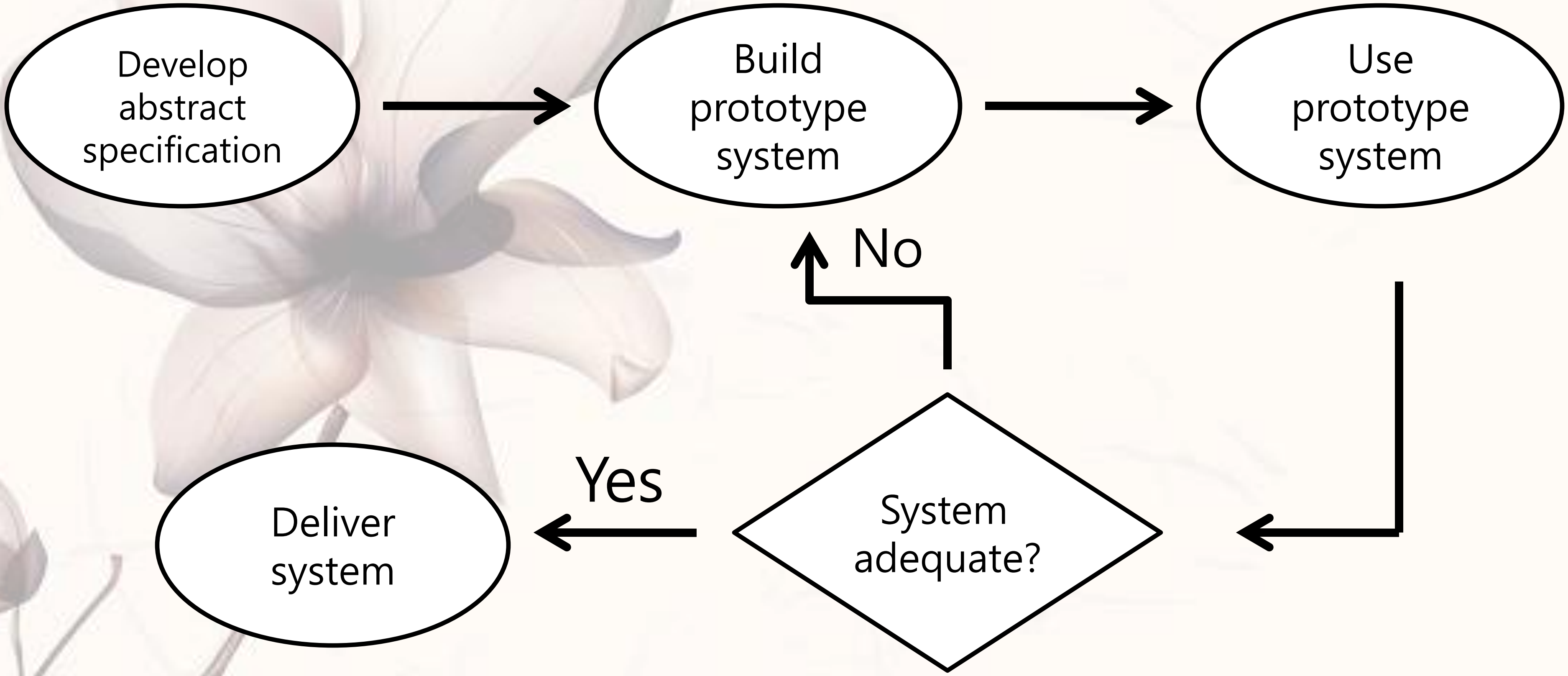
Evaluation report

System development by Prototyping(Iterative way)

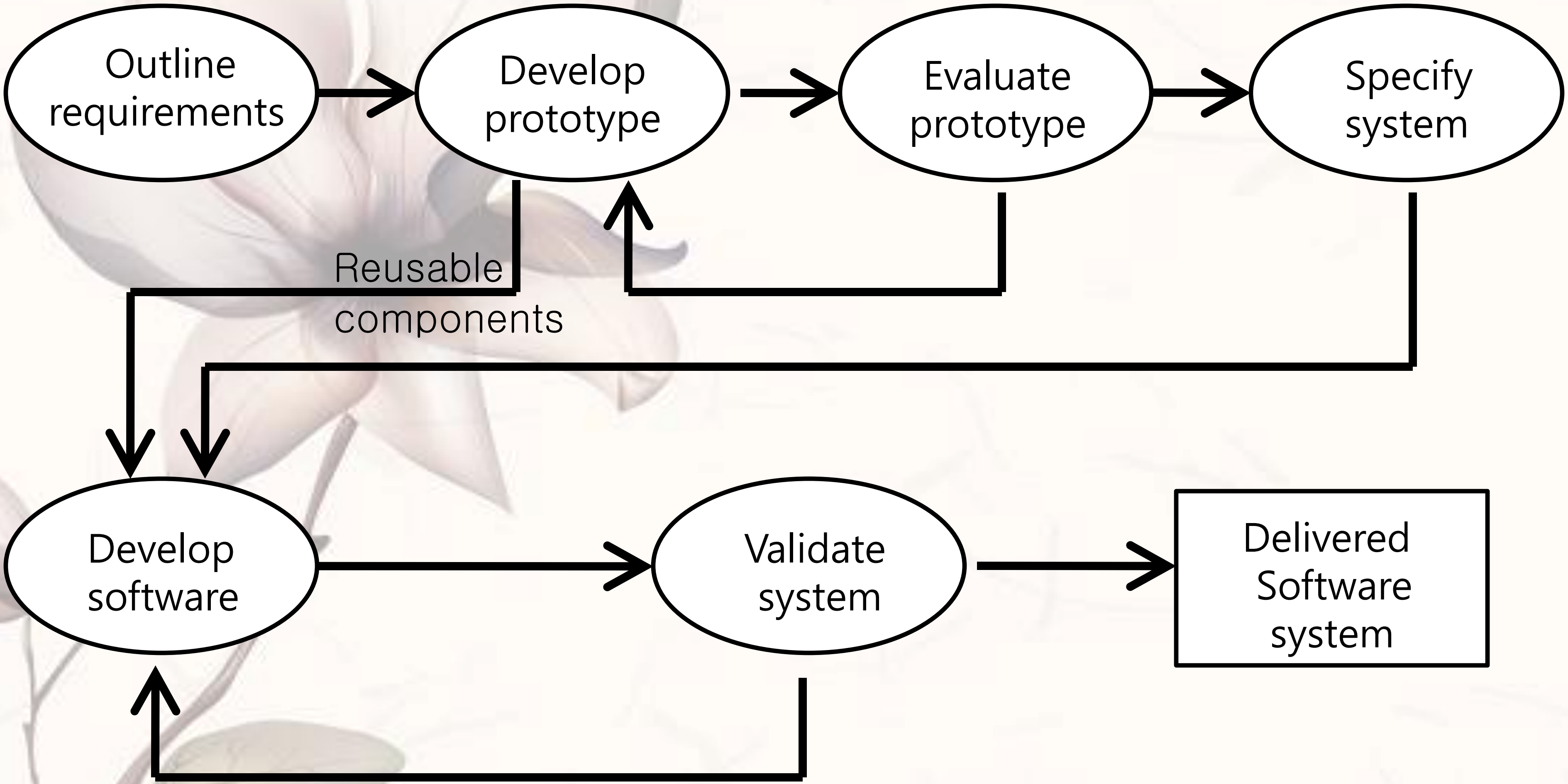


Evolutionary Prototyping vs. Throwaway Prototyping

Evolutionary Prototyping



Throwaway Prototyping



Evolutionary Type

- Specification, design and implementation are inter-twined.
- The system is developed as a series of increments that are delivered to the customer.
- Techniques for rapid system development are used such as CASE tools and 4GLs.

Throwaway Type

- Used to reduce requirements risk.
- The prototype is developed from an initial specification, delivered for experiment then discarded.
- The throwaway prototype should not be considered as a final system.

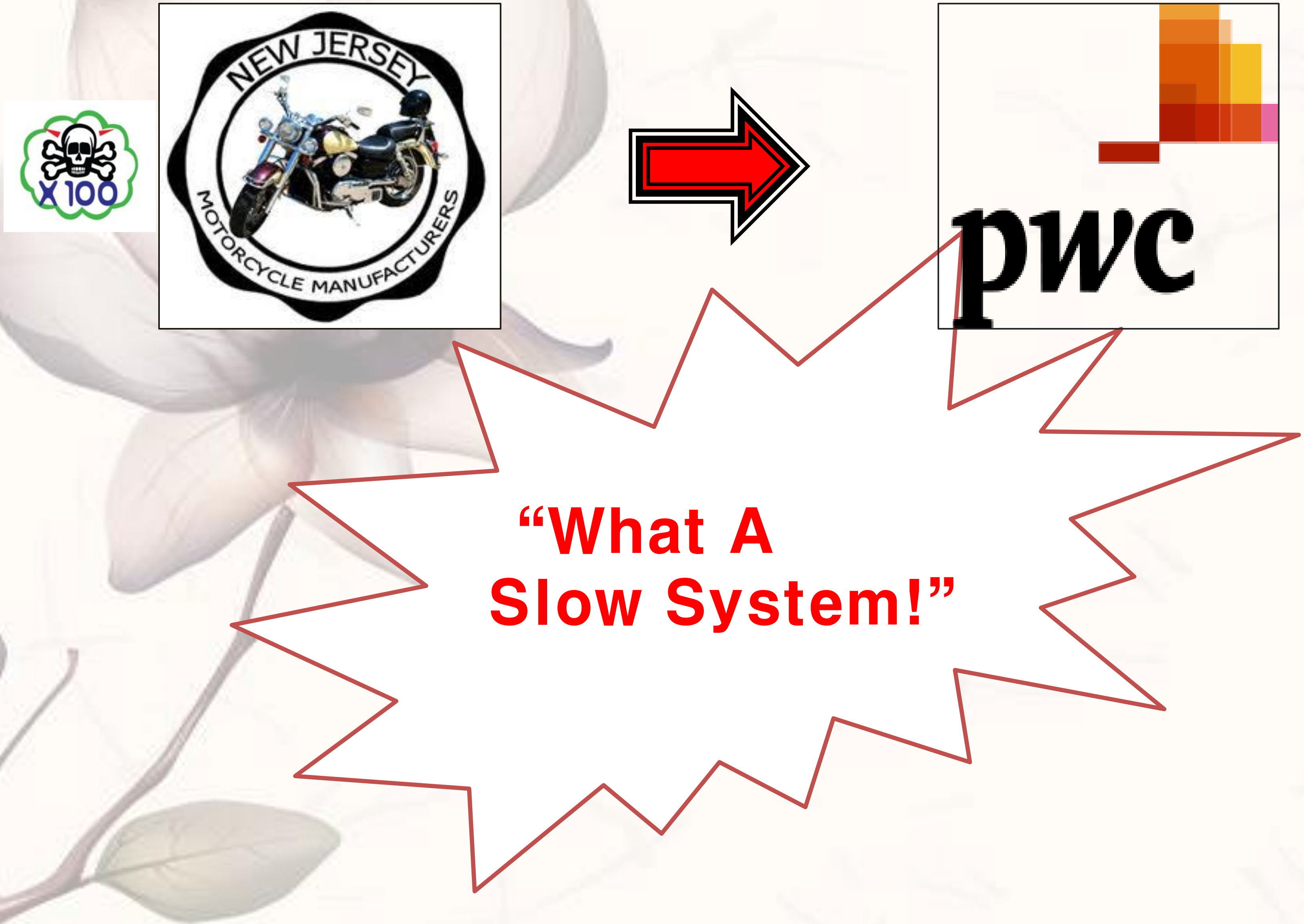
☺ For example – ① New Jersey Division of Motor

⇔

pwc

"Give us DB system" ⇒

⇐ *A program based on 4GL Applied Data Research (ADR) (but, not well done)*



"What A Slow System!"

Why did they give a failure ?

- They had no experience using any 4GL.
- They had no sufficient time and finance.
- **They had no sufficient client’s needs.**

In this case, they should use Throwaway Prototyping.

It is easy to discard and rapidly check the final system
for both developer and client.

☺ For example – ② Town and Country Credit Line (TCCL)

town & country CREDIT UNION

“Give us
speedy, immediate,
credible, strong …
new system.”

“Instead, we are
willing to generously
support you !”

town & country
CREDIT UNION

Successful system

How did they give a success ?

- They had developed in role sharing.
- They did communication well between groups.
- They had sufficient time and finance.
- They had sufficient client’ s needs.
- They were supported advanced prototyping tools.

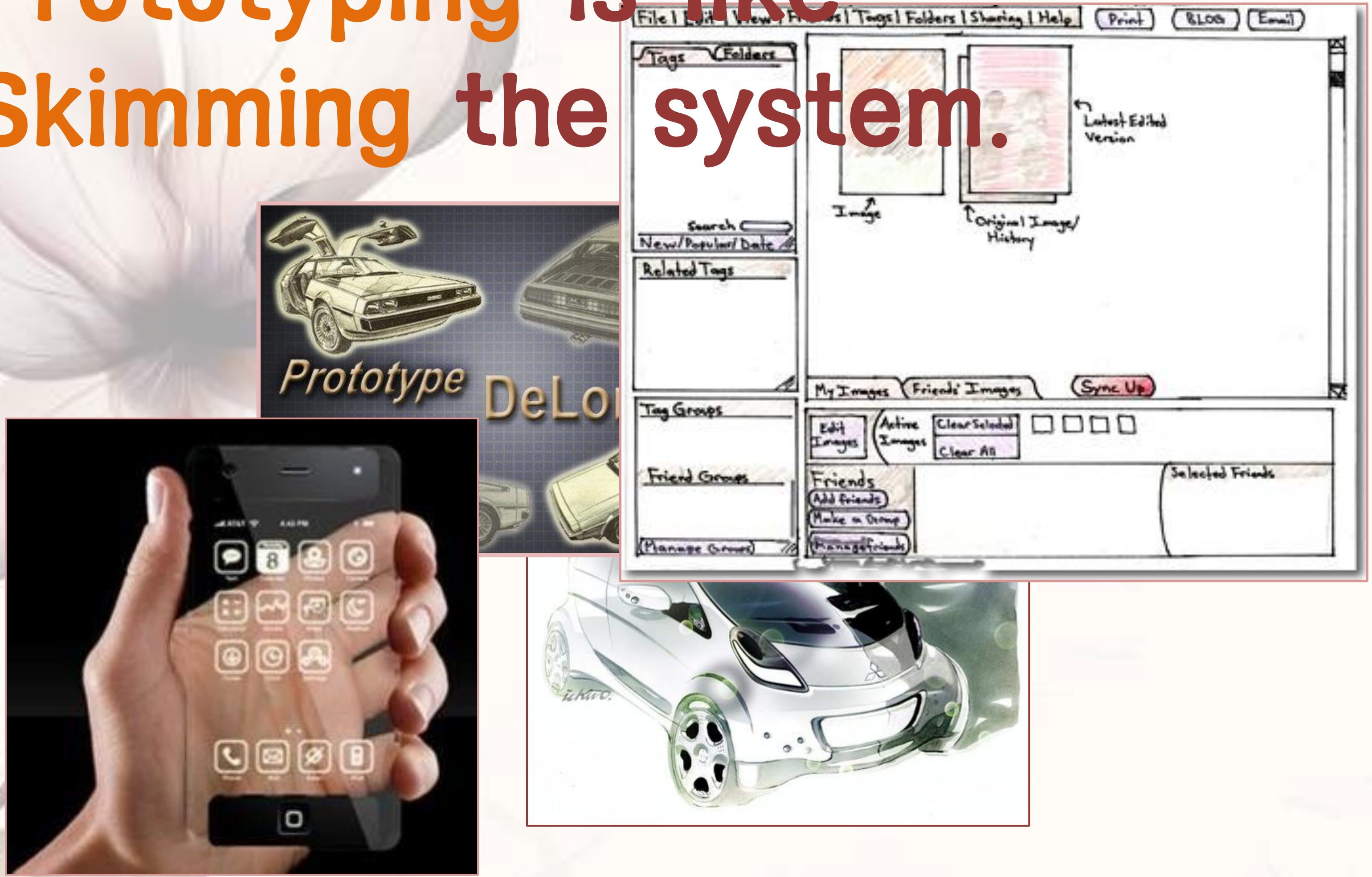
town & country
CREDIT UNION

Against previous team, this team had sufficient information and advanced prototyping tools.
And because they had developed in role sharing,
they could work systematically.

So, any types of prototyping are fine.

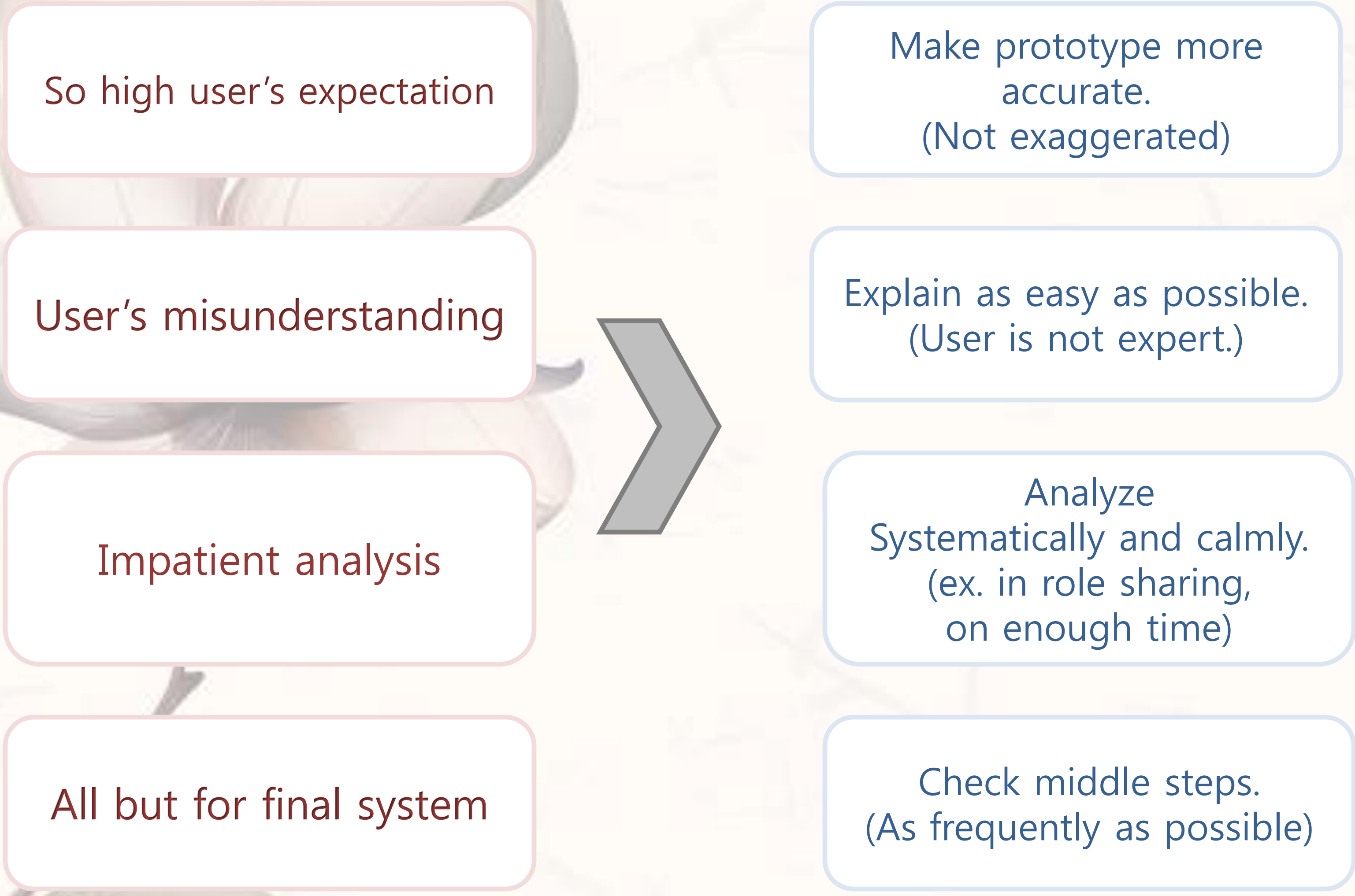
Ⅲ. Summary of Prototyping

☺ Prototyping is like Skimming the system.



Merits	· Fast · Easy · Visualizing · Communicated · Economical
Demerits	· So high user's expectation · User's misunderstanding · Impatient analysis · All but for final system
Human-Factor Guidelines	· Also human · Predictable Unobtrusive · Safe
Evolutionary Type	· By evolving an initial version
Throwaway Type	· Used to understand system requirements
Care	· Using only for viable option

Compensating defects
(To be alternative systems development methodology)



So high user's expectation

User's misunderstanding

Impatient analysis

All but for final system

Make prototype more accurate.
(Not exaggerated)

Explain as easy as possible.
(User is not expert.)

Analyze
Systematically and calmly.
(ex. in role sharing,
on enough time)

Check middle steps.
(As frequently as possible)

If prototyping overcomes these defects,
It can be good <u>alternative systems development methodology</u>!

Thanks for attention !

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