



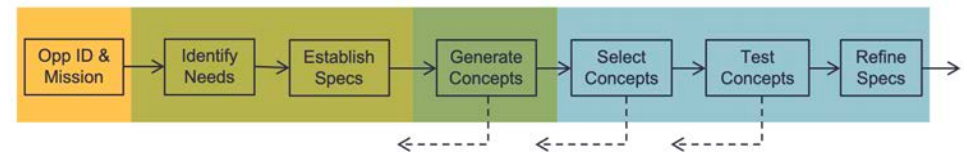
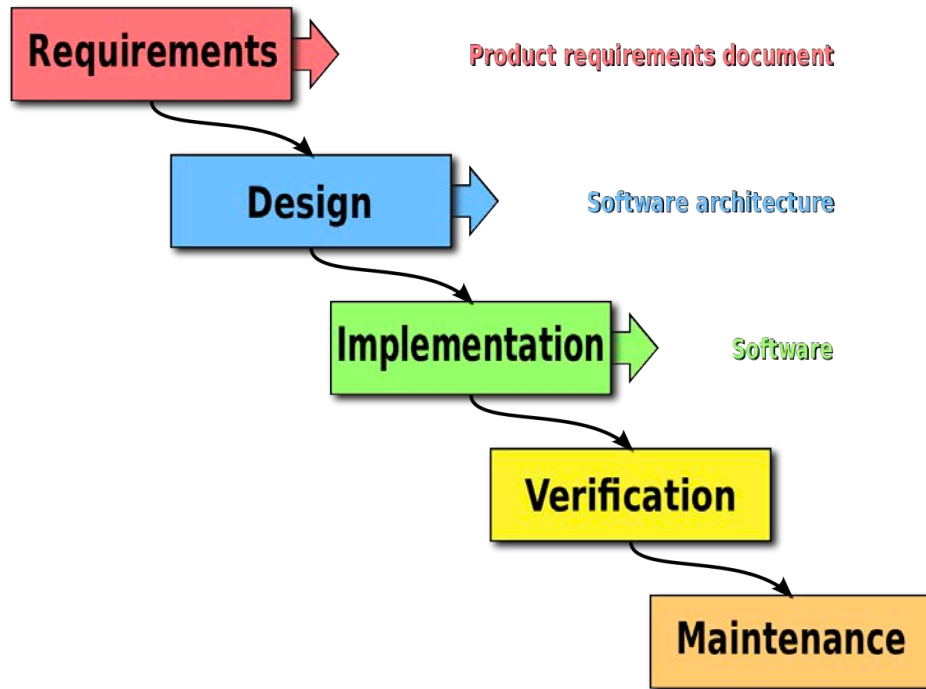
# Agile, Coordinating Technical Resources & Physical Product Development

Professor Karl T. Ulrich

Vice Dean of Entrepreneurship & Innovation

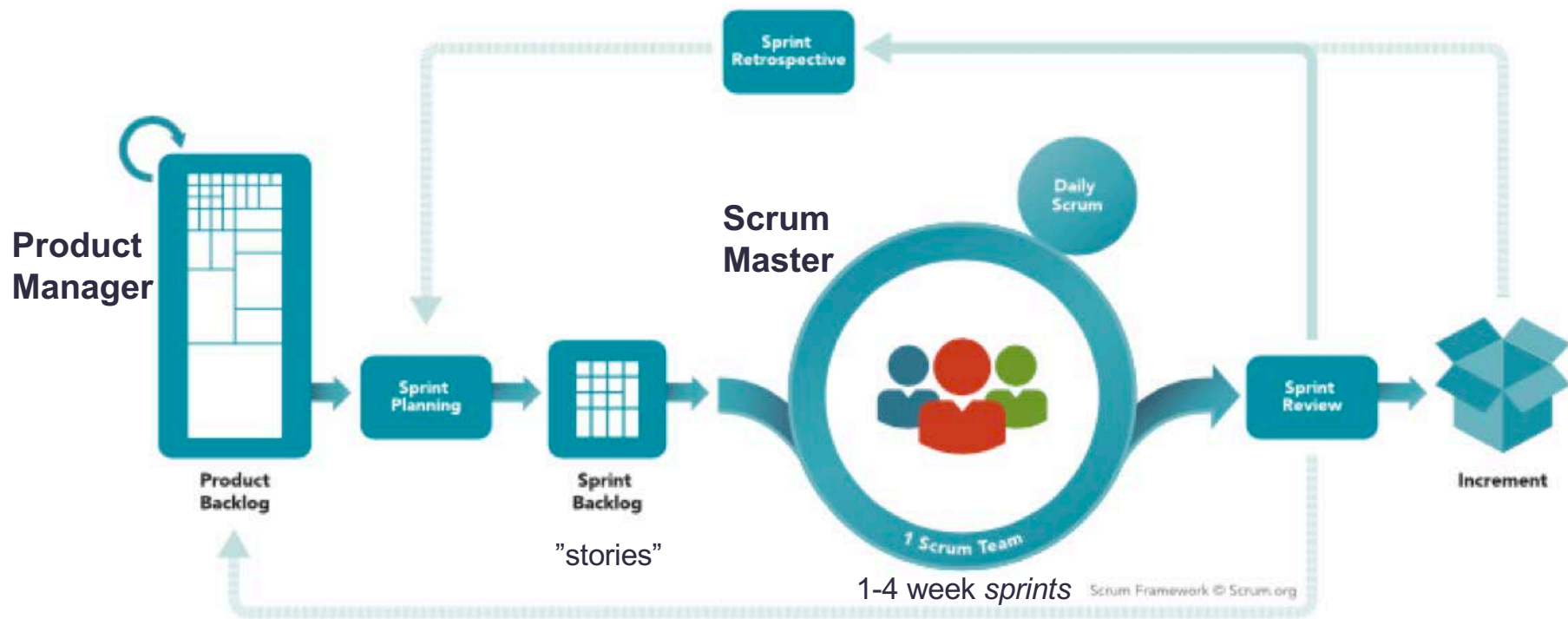
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# “Waterfall” Development Process



# Agile Development (aka Scrum)

## SCRUM FRAMEWORK



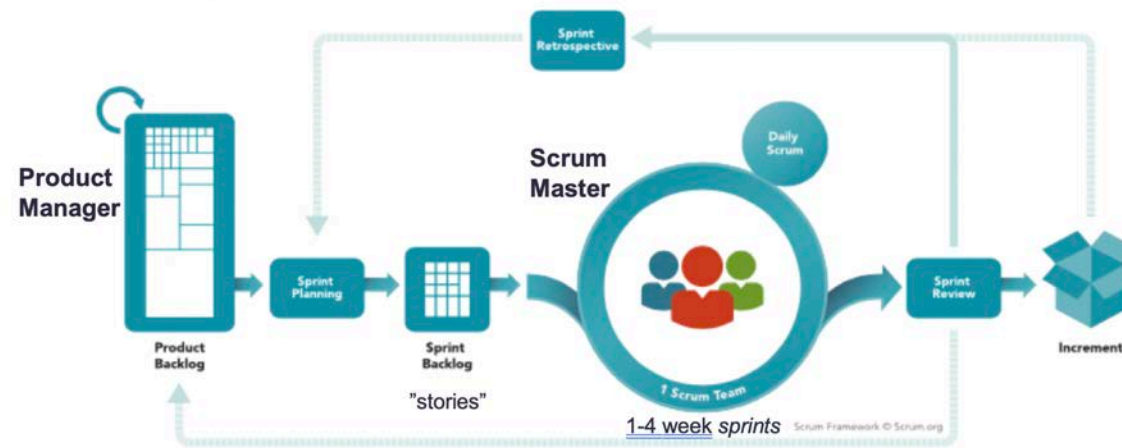
References [https://en.wikipedia.org/wiki/Agile\\_software\\_development](https://en.wikipedia.org/wiki/Agile_software_development)  
<https://www.scrum.org/>

# Agile – Scrum Stories

Describe functions, jobs, and user needs in terms of *stories* about the user.

Examples:

- As a user, I can backup my entire hard drive. [Broad stories are sometimes called *epics*.]
  - As a power user, I can specify files or folders to backup based on file size, date created and date modified.
  - As a user, I can indicate folders not to backup so that my backup drive isn't filled up with things I don't need saved.



MORE:

<https://www.mountaingoatsoftware.com/agile/user-stories>





## Agile not always viable approach – Why not?



# Modular vs. Integral Architectures



*modular*



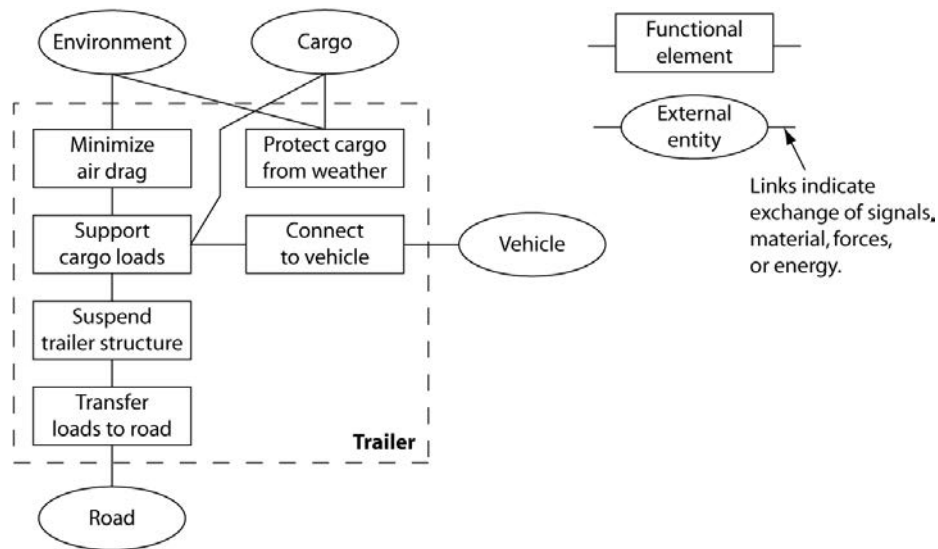
Shimano brake  
and shift lever  
system

*integral*

## SOURCE:

Karl T. Ulrich, *Design: Creation of Artifacts in Society*. <http://ulrichbook.org/>

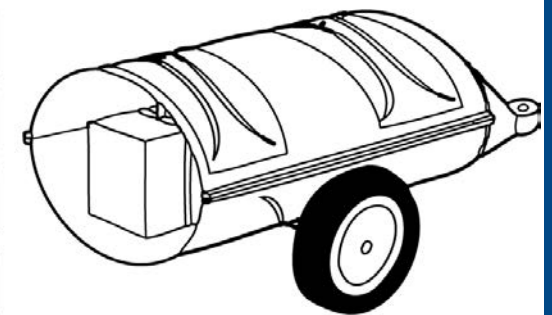
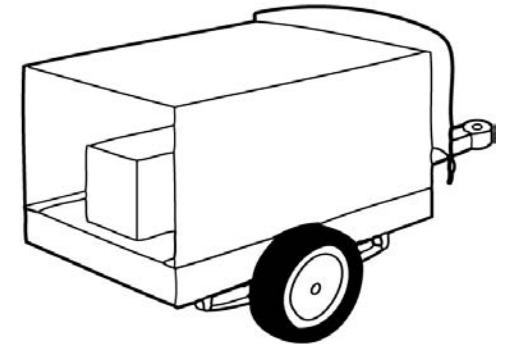
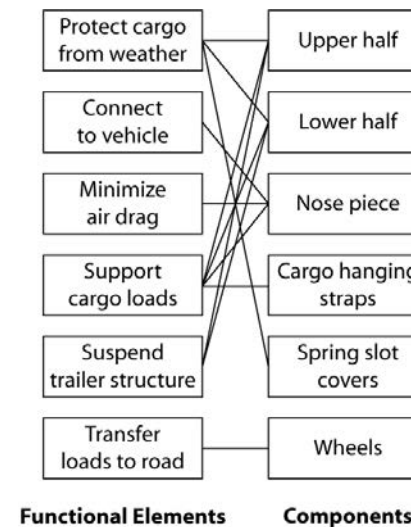
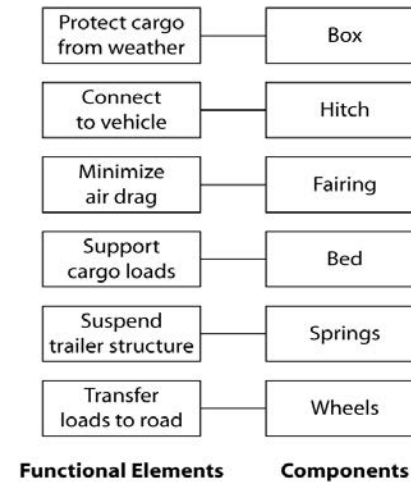
# Modular vs. Integral Architectures



Function Diagram for a Trailer

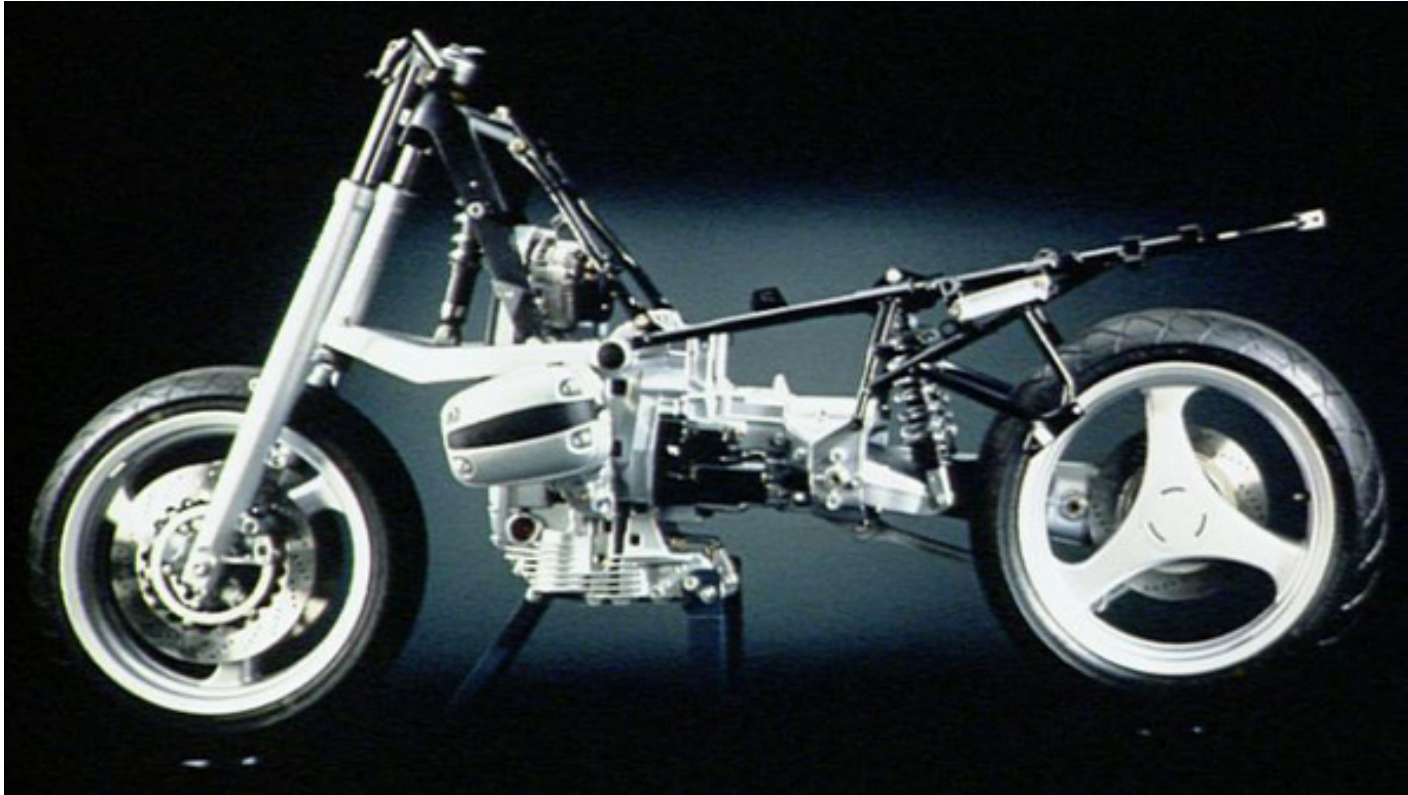
## SOURCE:

Karl T. Ulrich, *Design: Creation of Artifacts in Society*. <http://ulrichbook.org/>





## Why Integral Architectures?



BMW RS1100 Engine/Transmission/Frame System

**MORE:**

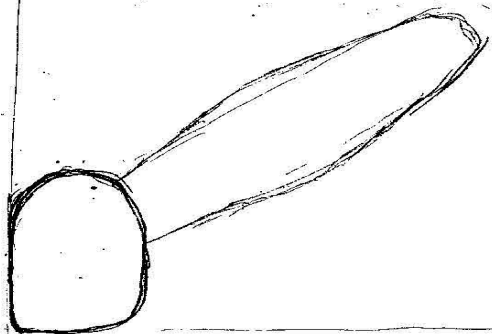
Karl T. Ulrich, *Design: Creation of Artifacts in Society*. <http://ulrichbook.org/>





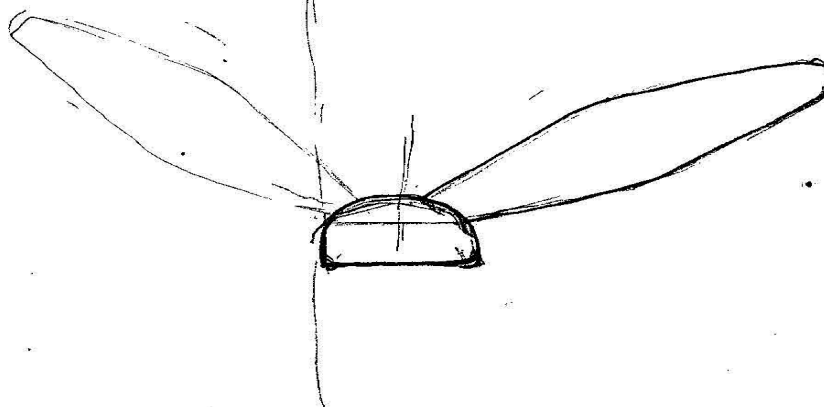
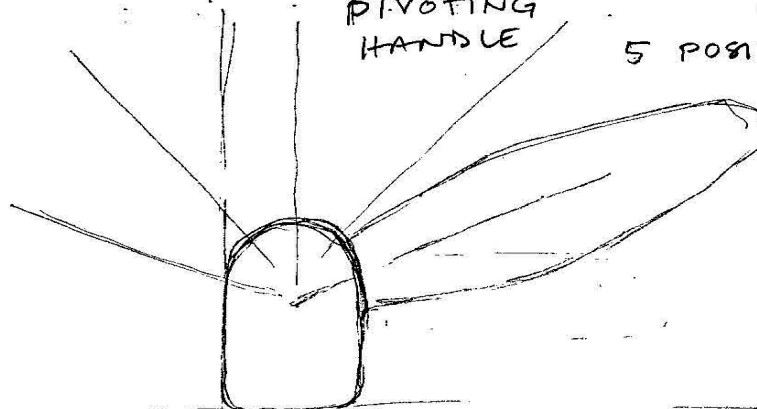


FIXED  
OPTIMAL  
→ HANDED



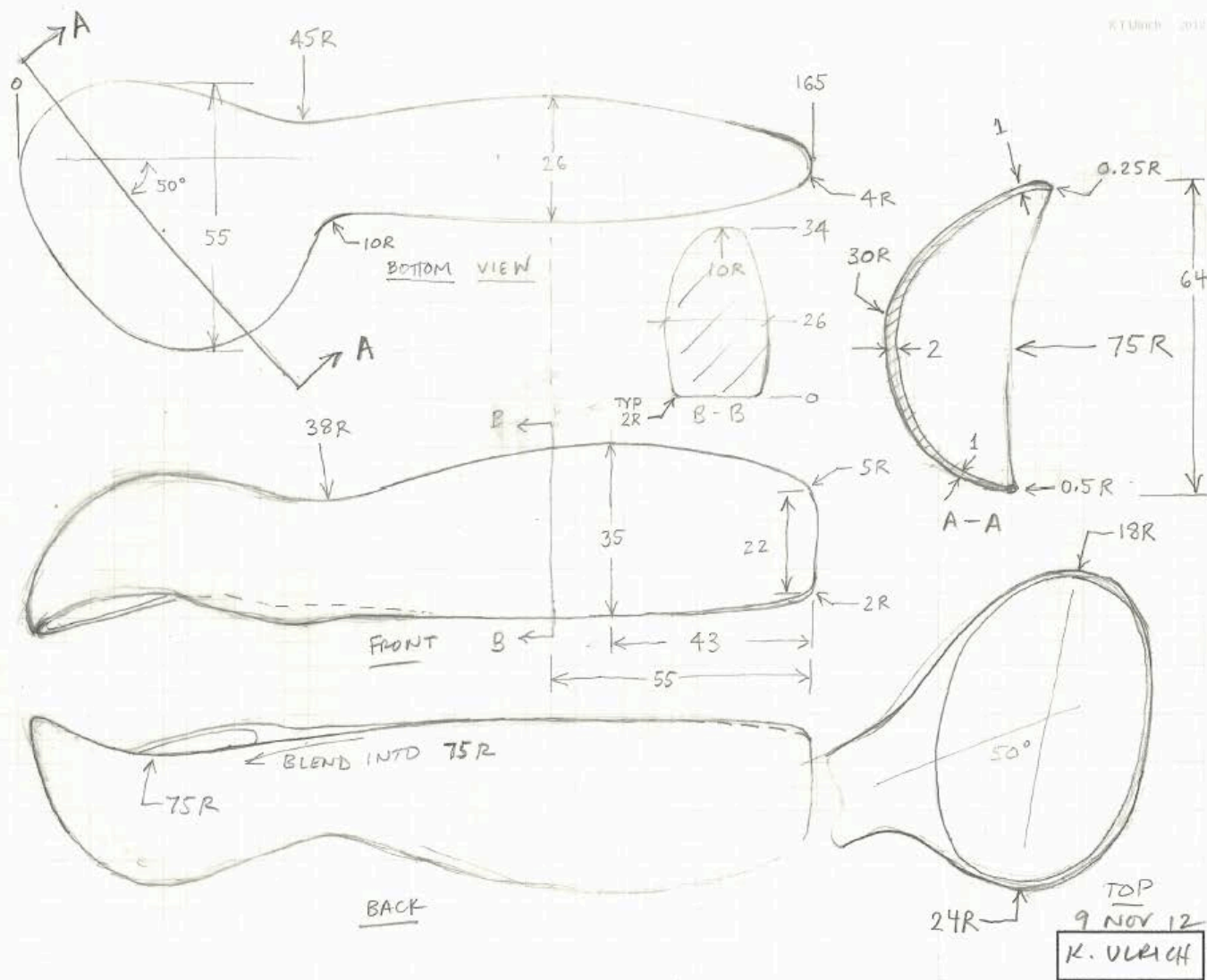
PIVOTING  
HANDLE

5 POSITIONS



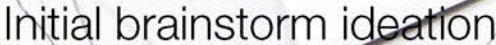




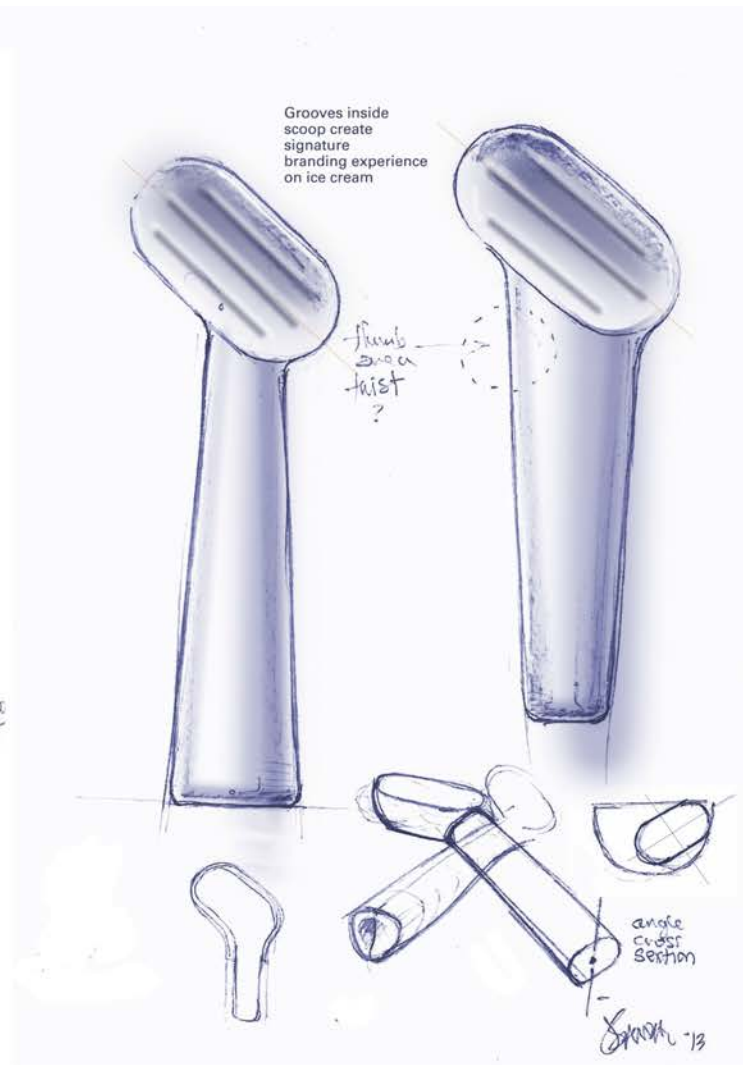
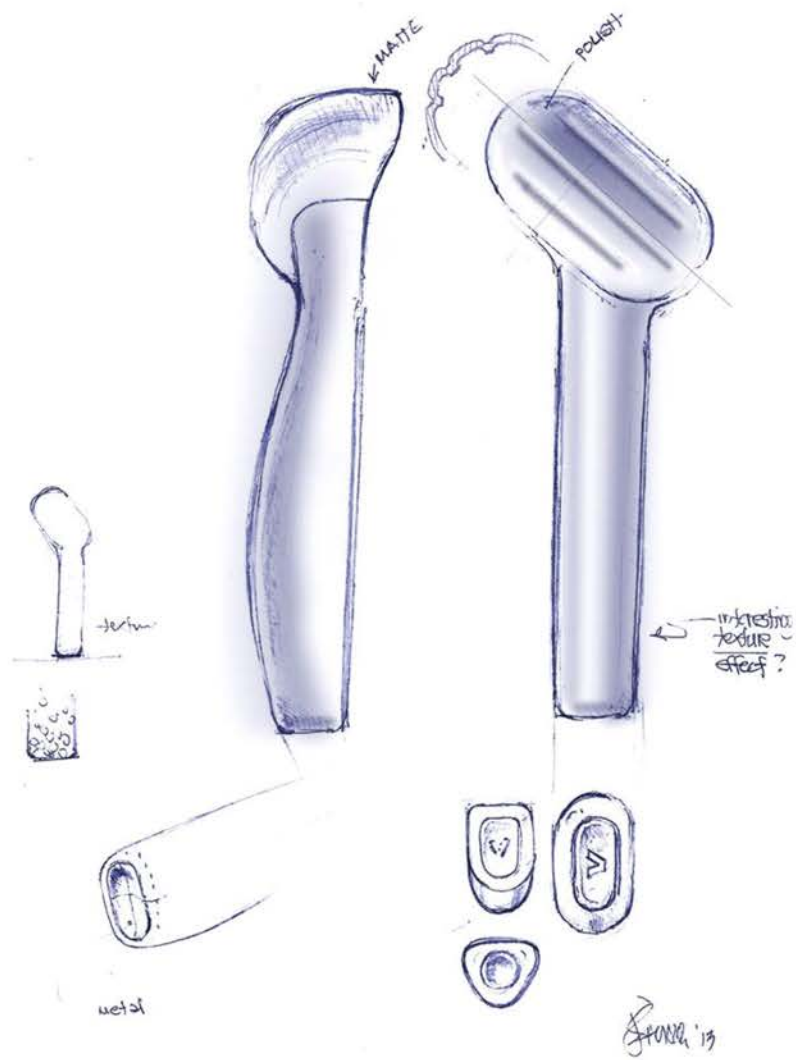






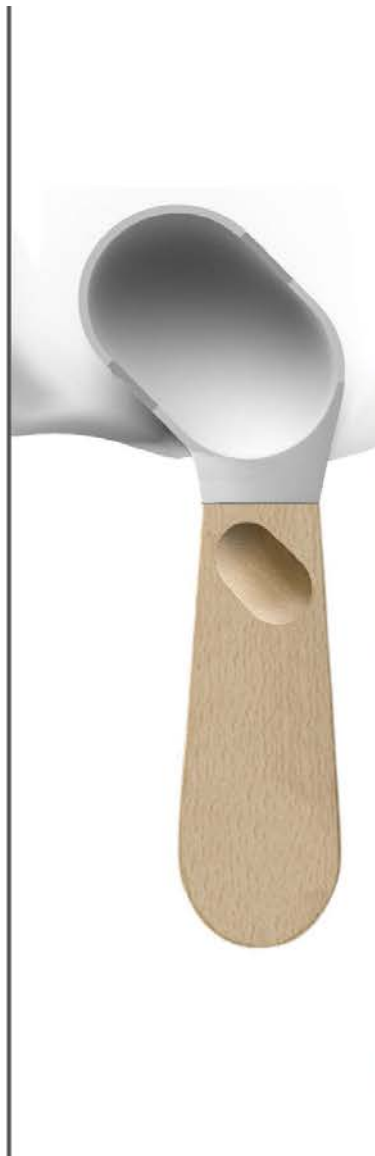








- + Distinctive (out OXO OXO!)
- + Speaks to ergonomics (out OXO OXO!)
- + Is ergonomic (out OXO OXO!)
- Challenging intersection between handle and scoop
- Lacking visual balance (a bit awkward)

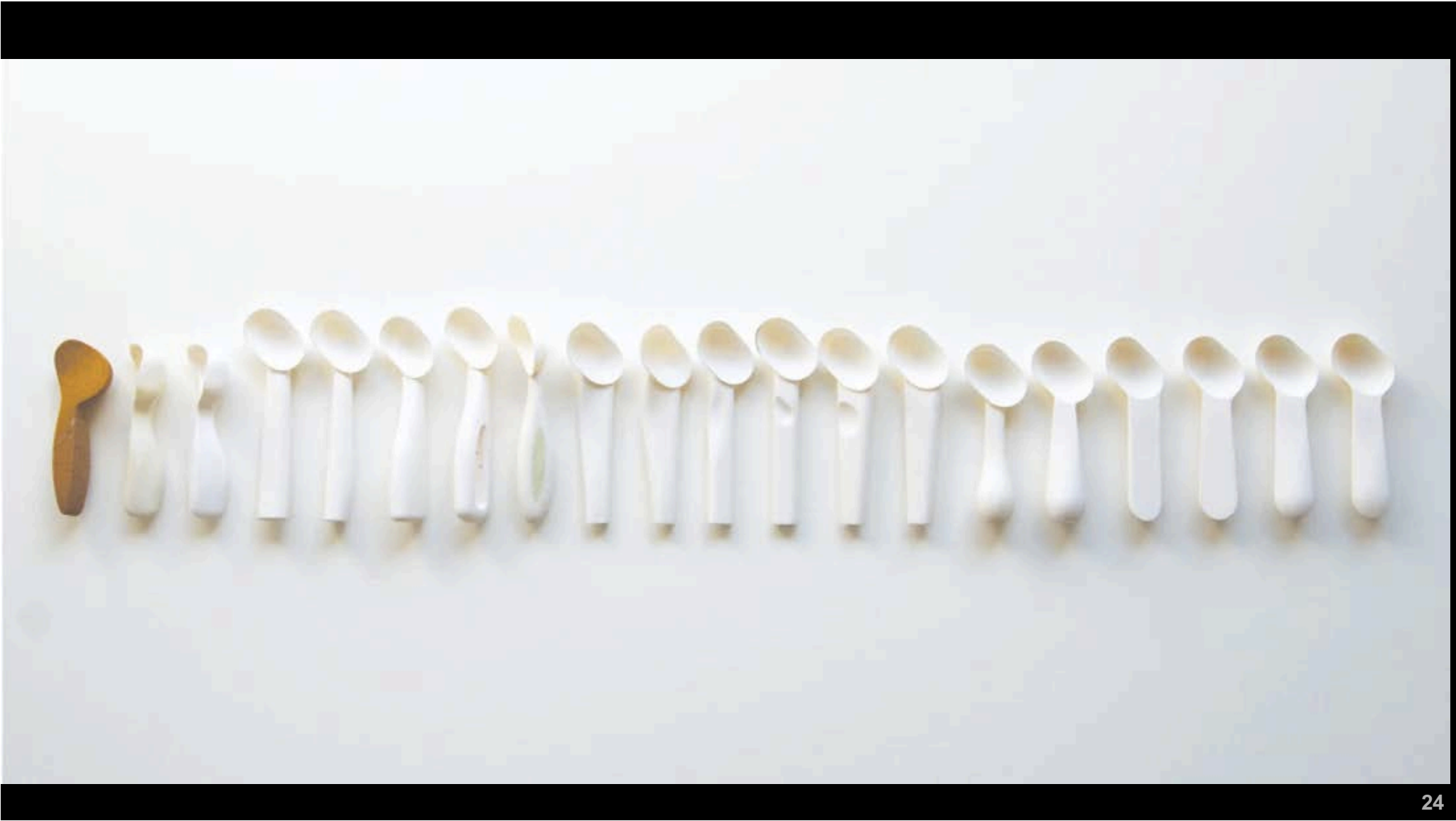




- + A balanced Craft + Design philosophy
- + Memorable and pure
- + Ergonomics























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# Belle-V Ice Cream Scoop

by Belle-V Kitchen

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Updates 11

Backers 1,289

Comments 58

📍 San Francisco, CA

🔧 Product Design

**Funded!** This project was successfully funded on Dec 8.



1,289

backers

\$64,724

pledged of \$5,000 goal

0

seconds to go



Project by  
**Belle-V Kitchen**  
Chicago, IL

[Contact me](#)

📅 First created · 2 backed





(12) **United States Design Patent**  
**Ulrich et al.**  
(10) **Patent No.:** **US D713,219 S**  
(45) **Date of Patent:** **\*\* Sep. 16, 2014**

(54) **ICE CREAM SCOOP**

(71) Applicant: **Belle-V, LLC**, Chicago, IL (US)

(72) Inventors: **Karl T. Ulrich**, Philadelphia, PA (US);  
**Jeffrey Allen Salazar**, Palo Alto, CA (US); **Alan J. Cook**, Chicago, IL (US);  
**Jeff Smith**, San Francisco, CA (US);  
**Kevin John Augustyniak**, Elma, NY (US); **Gerard Furbushaw**, Menlo Park, CA (US); **Kenneth D. Wood**, Portola Valley, CA (US)

(73) Assignee: **Belle-V, LLC**, Chicago, IL (US)

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/468,569**

(22) Filed: **Oct. 1, 2013**

(51) **LOC (10) CL** ..... **07-99**

(52) **U.S. CL** ..... **D7/681**  
USPC ..... **D7/681**

(58) **Field of Classification Search**  
CPC ..... **A47J 43/282**  
USPC ..... **D7/680-696, 368, 669, 395, 393;**  
**30/324-328; 425/187, 276-286, 299,**  
**425/DIG. 13; 294/176-180**

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D475,899 S \* 6/2003 Ming-Shiue ..... D7/681  
D501,374 S \* 2/2005 Crowley ..... D7/681  
D505,303 S \* 5/2005 Crowley ..... D7/681

\* cited by examiner

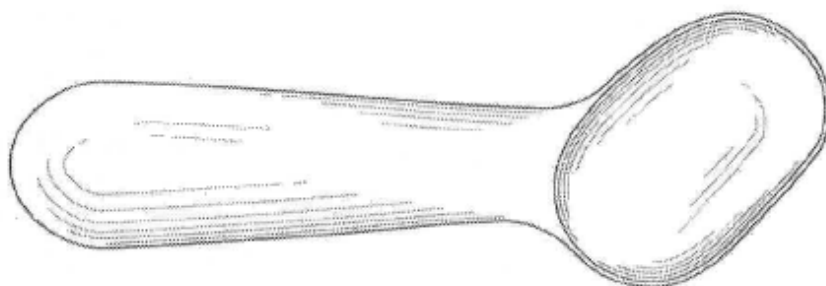
Primary Examiner — Terry Wallace  
(74) Attorney, Agent, or Firm — Michael J. Fernal; Much  
Shelist

(57) **CLAIM**  
The ornamental design for an ice cream scoop, as shown.

**DESCRIPTION**

FIG. 1 is a perspective view of an ice cream scoop with a two piece handle showing our new design;  
FIG. 2 is a right side elevation of the ice cream scoop of FIG. 1;  
FIG. 3 is a left side elevation of the ice cream scoop of FIG. 1;  
FIG. 4 is a top end view of the ice cream scoop of FIG. 1;  
FIG. 5 is a bottom end view of the ice cream scoop of FIG. 1;  
FIG. 6 is a top view of the ice cream scoop of FIG. 1; and  
FIG. 7 is a bottom view of the ice cream scoop of FIG. 1.  
FIG. 8 is a perspective view of an ice cream scoop of an unitary construction showing our new design;  
FIG. 9 is a right side elevation of the ice cream scoop of FIG. 8;  
FIG. 10 is a left side elevation of the ice cream scoop of FIG. 8;  
FIG. 11 is a top end view of the ice cream scoop of FIG. 8;  
FIG. 12 is a bottom end view of the ice cream scoop of FIG. 8;  
FIG. 13 is a top view of the ice cream scoop of FIG. 8; and  
FIG. 14 is a bottom view of the ice cream scoop of FIG. 8.

**1 Claim, 6 Drawing Sheets**



*Claim 1 from Utility Patent 9,173,527*

1. An ergonomically designed ice cream scoop, comprising:
  - a handle;
  - and a scoop head integrally attached to the handle
    - having an irregular bowl for receiving an ice cream therein
      - with a generally spade-shaped leading edge
        - integral with a portion of the bowl and
        - extending outwardly therefrom for scooping an ice cream out of a container,
    - wherein the bowl is generally an oblong shaped scoop member attached at one end of the handle at an approximately 45 degree angle from a longitudinal axis running the length of the handle.

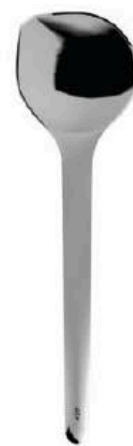




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Designer **Valerio Sommella**



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## Belle-V



Silver | Kitchens | 2014

The Belle-V ice cream scoop is a solid aluminum scoop with a classic, ergonomic design that is made to last. The angled head works with the natural rolling action of a user's wrist to give maximum leverage to easily scoop the hardest ice cream. The spade-shaped edge helps users get into those hard-to-reach corners at the bottom of the ice cream container.

Designed by Jeff Salazar, IDSA, Karl Ulrich, Alan Cook, Gerard Furbershaw, Jeff Smith, Junggi Sung and Ken Wood of Belle-V

Contact: Naomi Kieser - [naomi@lunar.com](mailto:naomi@lunar.com)



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## LUNAR



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AWARD CATEGORY

Product Design

YEAR

2014



Belle-V Ice Cream Scoop

by LUNAR

124 1713

Engineering, Industrial Design, Prod...



Lendstar

by LUNAR

10 499

Interaction Design, Product Design, ...



NOVA

by LUNAR

72 1097

Interaction Design, Product Design, ...



Mobilegear.com



SF Prep



SWITCH

Jerry Greenfield of  
*Ben & Jerry's*



## What's the Scoop?

- No product category is so mature you can't innovate.
- No product is so simple that it doesn't present commercialization challenges.
- Conceptual insight + excellent industrial design = wow product.
  - Business discipline also important!
- Crowdfunding can be a nice way to launch a product.
- Great product does not ensure a great stand-alone business.

