

Challenge Map and Idea Generation

SP.718 Lecture 2 2/24/10

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Robert Emerson

Other Announcements

- \$10K per project
- Talk with me and Paula for >\$500 item
- Talk with Kenny before building anything
- Team meeting
 - Legoleg
 - Shape and roll foot
 - Composite
 - Vacuum Casting
- Mid-term Presentation <20min on 3/17

Paul's 12 practical steps

1. Go to where the action is.
2. Talk to the people who have the problem and listening to what they say.
3. Learn everything you can about the problem's specific context.
4. Think big and act big.
5. Think like a child
6. See and do the obvious.
7. If somebody has already invented it, you don't need to do so again.
8. Make sure your approach has positive measureable impacts that can be brought to scale. Make sure it can reach at least a million people and make their lives measurably better.
9. Design to specific cost and price targets.
10. Follow practical three-year plans
11. Continue to learn from your customers.
12. Stay positive: don't be distracted by what other people think.

[Out of Poverty, Paul Polak]

Diverge

Diagram showing "Diverge" and "Converge" during design process by Tim Brown has been removed due to copyright restrictions.



Observation: this guys can walk but not stable at all. Especially, when he walks at fast speed

Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti – Jaipur Foot Organization, Jaipur, India. Used with permission.



Where was this leg made??
Comfortable?
Sometime, knee lock mechanism does not work
Runnable?
impossible
duration??

How old is he?
?

Cost?
\$30

Does not look like human leg
Machining??
CNC
How long?

Material?
HDPE

Reason for loosing his leg?
Automobile accident

Looks cool

Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti - Jaipur Foot Organization, Jaipur, India. Used with permission.



Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti - Jaipur Foot Organization, Jaipur, India. Used with permission.



Observation: Lots of patients visit the clinic,
and many of them crawl on the ground.

Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata
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Does it hurt?

Hard to move



Where is he from?
Is he from that far?

How did he get lost his leg?

What's the guy next to him doing?

How old ?

What happens to him Afterward?

Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti - Jaipur Foot Organization, Jaipur, India. Used with permission.

Does it hurt?

Hard to move

Transportation bound for clinics

Need better after care?

What's the guy next to him doing?

How old ?

What happens to him Afterward?

Better advertisement?

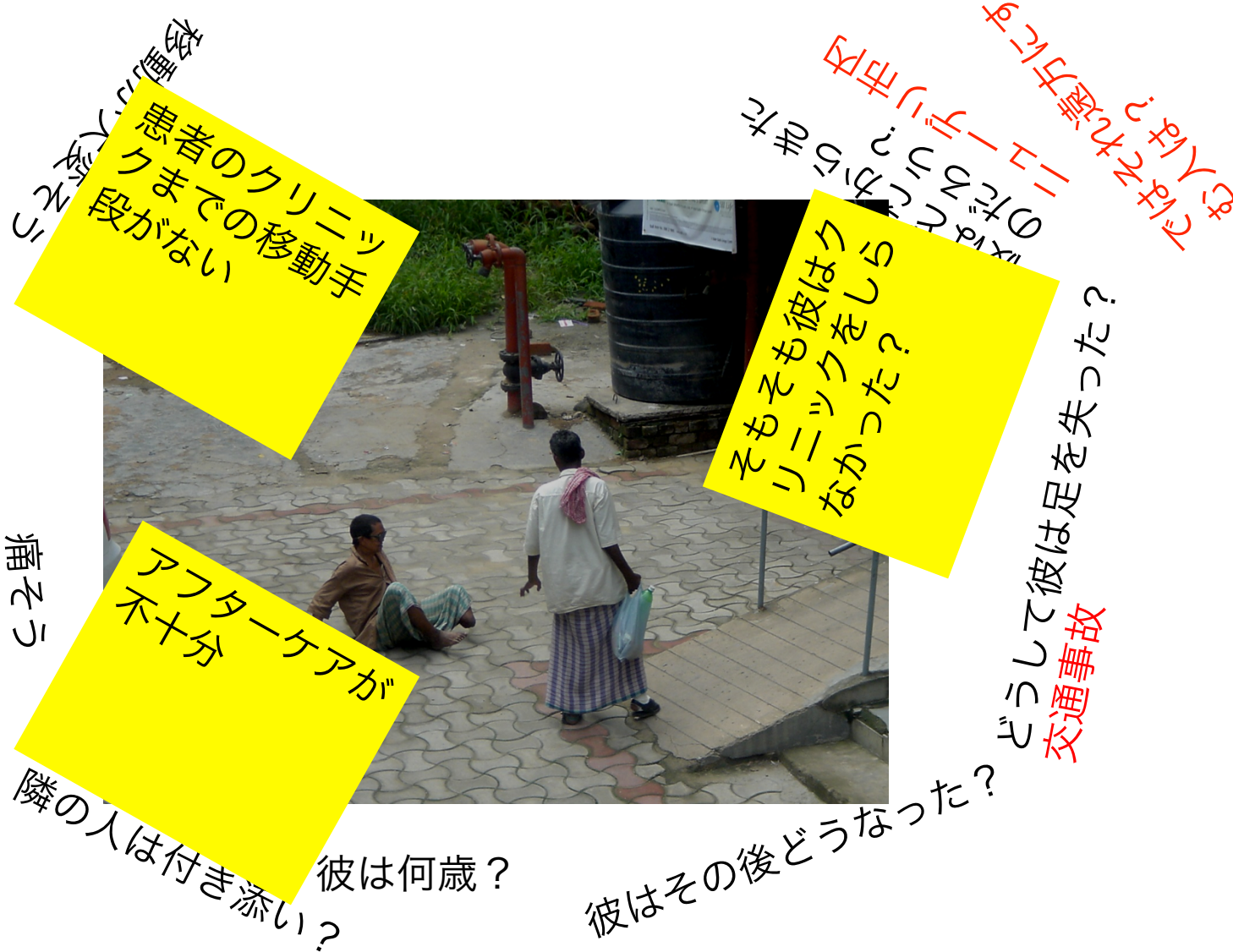
How did he get lost his leg?

Where is he from?

Is he from that far?



Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti - Jaipur Foot Organization, Jaipur, India. Used with permission.



患者のクリニックまでの移動手段がない

そもそも彼はクリニックをしらなかつた？

アフターケアが不十分

どうして彼は足を失った？
交通事故

彼は何歳？
隣の人は付き添い？

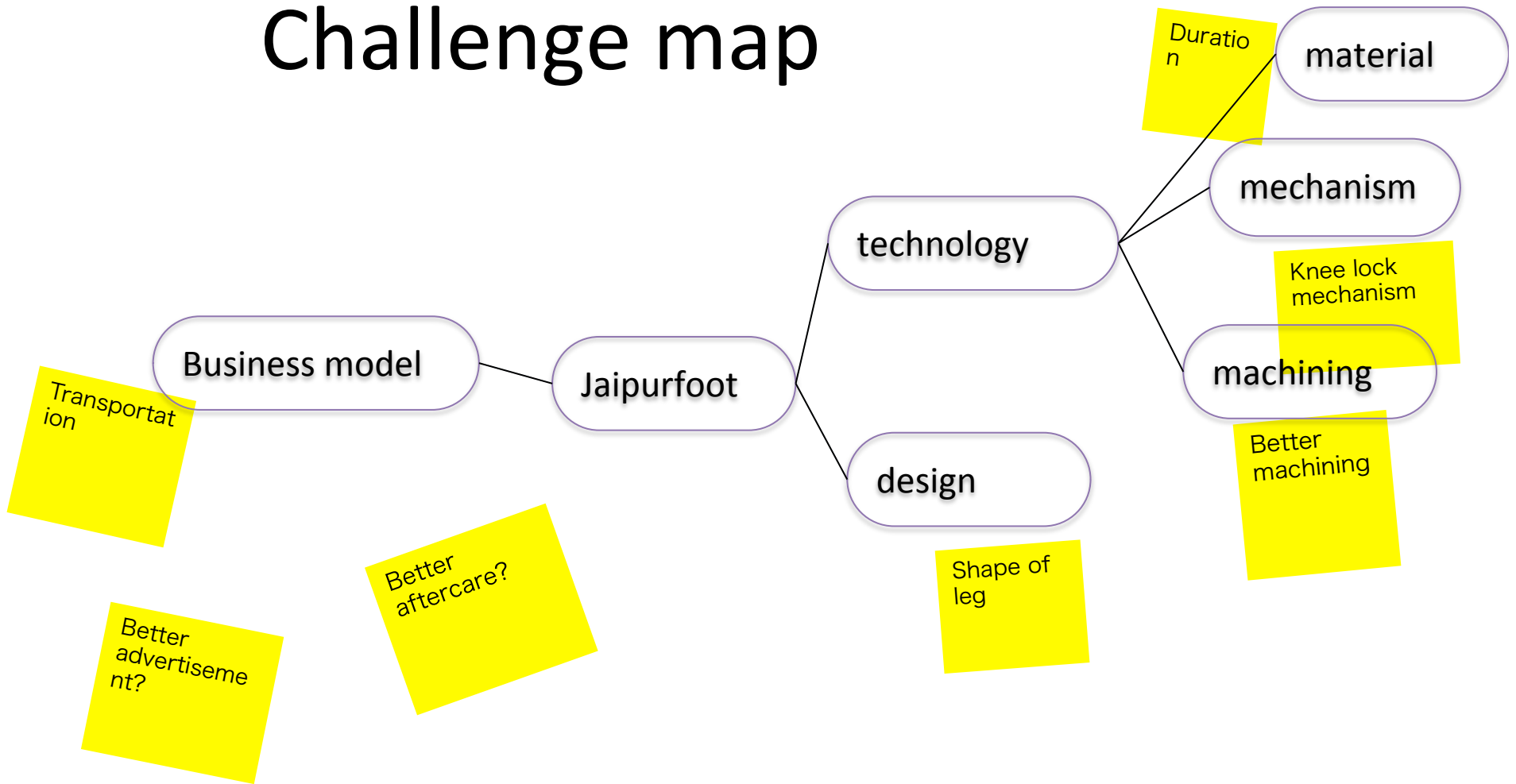
彼はその後どうなった？

人はどこへ送られた？
ニューデリー市内

Courtesy of Dr. Pooja Mukul, Bhagwan Mahaveer Viklang Sahayata Samiti - Jaipur Foot Organization, Jaipur, India. Used with permission.

この状態の写真をとっておいてください

Challenge map



Idea sheet

D-Lab
Development Through Dialogue, Design & Dissemination
Design Idea Sheet

Project Name _____

- As many idea sheet as possible
- Check your network rather than feasibility

Sketch and Brief Description	
End-Users	Skill/Technology
Stakeholder	Challenge

Converge

Image removed due to copyright restrictions.
Diagram shows starting with the divergent process of creating choices, followed by convergence through making choices.
From Brown, Tim. *Change by Design*. HarperCollins, 2009

Ways to (not) Fail

- Don't challenge your ideas: USS Princeton
- Create single points of failure
- Assume you have complete knowledge of the problem:
Tacoma Narrows bridge
- When you fail, make the original problem worse: indoor stove
- Dispose of safety features when they're too expensive:
Bhopal
- Don't control your failure modes: wheelchairs

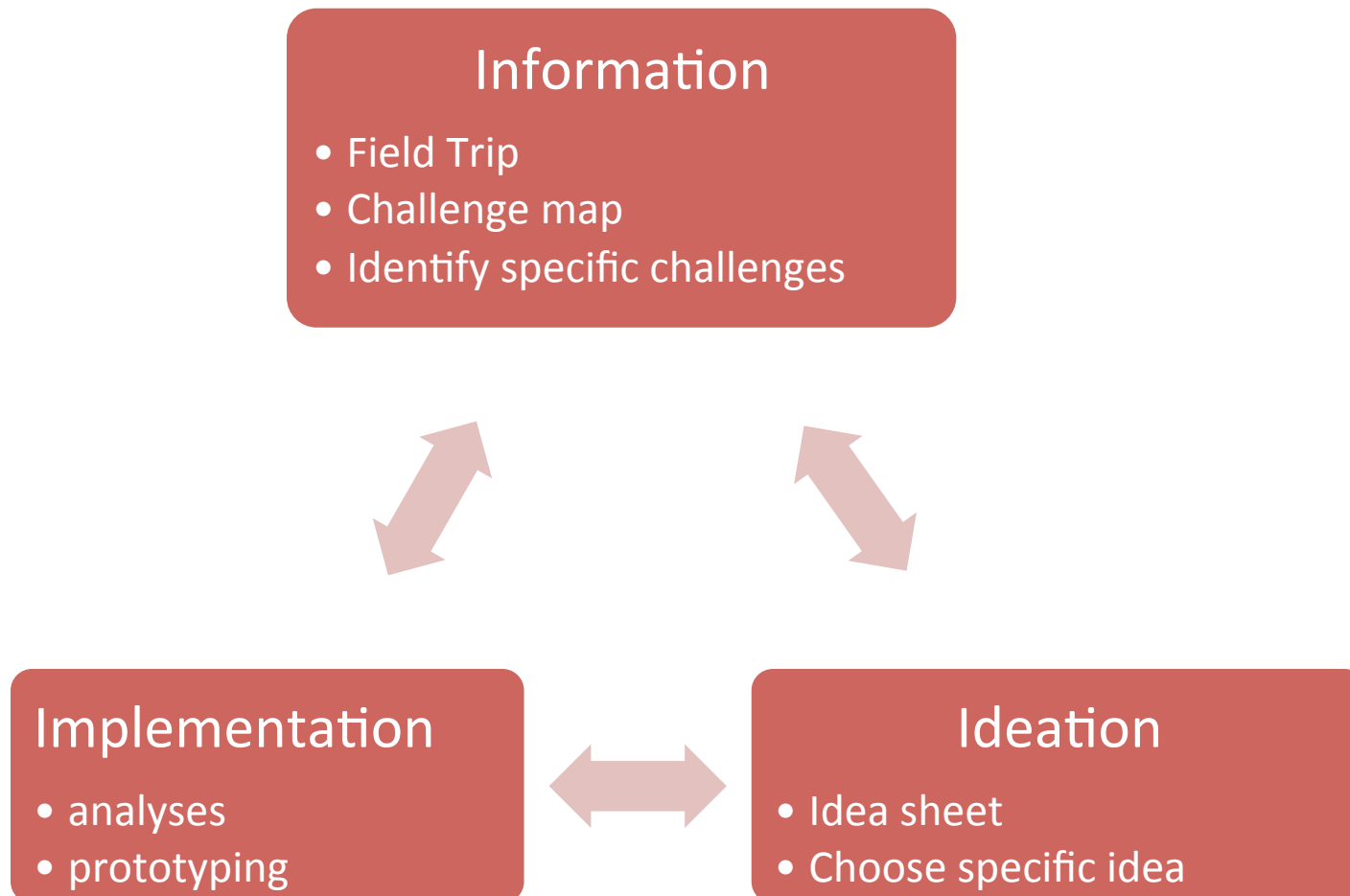
Idea to Prototype

- Pick up a few idea among all.
- Check which kind of technology you need.
- Check who you need to reach (find your stakeholders)

Stakeholder

- technology
 - What you have
 - What your friends have
 - What you need to find
 - What local people need

Manufacturing Process



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EC.722 Special Topics at Edgerton Center:Developing World Prosthetics
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