BACKGROUND

The Fab Lab brand, began as a community outreach program at the Massachusetts Institute of Technology (MIT) providing digital fabrication tools for rapid prototyping to the public.

The Fab Lab at the Museum of Science and Industry (MSI) in Chicago was completed in 2008. This state of the art facility received financial support from the National Science Foundation (NSF) and Argonne National Laboratories among other donors. They ultimately helped to create the best Fab Lab in North America.

PROBLEM

The Fab Lab is underutilized, and its full capabilities aren't realized. Presently, the Fab Lab at MSI mainly caters to high school student groups and remains closed to the general public.

GOALS

- Promote and market Fab Lab to build awareness
- Increase interactivity of the public
- Develop fundraising and business plan
- Investigate private prototyping opportunities
- Demonstrate the level of detail of machines
- Present the ideas to the MSI board

ORGANIZATION & APPROACH

TEAM ORGANIZATION & APPROACH	Public Outreach Team	Operations Model Team	Production Team
Research Methods	-Surveys -Focus Group	-Historical Data -Interviews	-Historical Data
Sources	-Ipro Students -Knapp Center Associates	-Other Fab Labs -Stakeholders	-Previous Ipros -MSI contacts -User Manuals

ANALYSIS AND FINDINGS

To reach out to the public, the team ran a focus group consisting of fellow IIT students currently enrolled in an IPRO course who reported the following:

- Insufficient software available (e.g., CorelDRAW) and suggested software like AutoCAD
- Unlabeled equipments with its name, capabilities and step-by-step graphics & instructions
- Lack of metal working machines
- Absence of online tutorials and videos introducing potential visitors to the Fab Lab and providing a general idea of the facility.

Also, the team presented at events where interest in the Fab Lab was garnered:

- Knapp Center's Connectiviity Event (entrepreneurs, hobbyists, college students)
  - 26th Annaul DuPage Engineer's Week Expo (middle/high school students, educators, hobbyists)

EQUIPMENT

- CNC Router: *ShopBot PRSalpha*
  - 96"x60x6" work area [Below Left]
- 3D Milling Machine:- *Roland Modela*
  - 8"x6"x2-3/8" work area [Below Right]


- 3D Printer: *Stratasys Prodigy Plus*
  - 8"x8"x12" work area
- Laser Cutter: *Epilog Mini 24*
  - 24"x12" work area

- Vinyl Cutter: *Roland CAMM-1 Servo*
  - 22-15/16" maximum width

- Electrical Station

CHALLENGES

- Limited accessibility to lab
- Little effort by MSI to provide access
- Difficulty contacting MSI liaison

CONCLUSION

The team has made good progress towards a viable operations model that is true to both the Fab Lab charter and MSI's mission. The best way for the Fab Lab to become self-sustainable is to divide operation time between educational learning labs and Fab Lab memberships:

- *Learning labs* will be an engaging experience educating students about the history of the Fab Lab, capabilities of each Fab Lab station, and the step-by-step completion of a project. A variety of projects will be available chosen by an educator.
  - Duration: 90 minutes
  - Twice daily, 3-5 days a week
  - Cost: $150 per session
  - Accommodate up to 20 students
- *Fab Lab memberships* allow members to use the Fab Lab when learning labs are not in session.
  - Requires MSI membership
  - Cost: $30 per hour per station
  - Includes free training and safety courses with on-line components

The revenue generated from learning labs and memberships can cover the costs of staffing, maintenance, and potential Fab Lab growth.

GUEST TESTIMONIALS

"I personally would use the Fab Lab for hundreds of home projects as I have big plans in that regard."

"The idea of laser 'painting' was new to me... To me, this kind of thing is utterly cool."

"While I was at the lab, ideas kept popping into my head about what other things I would like to do in there."

SPECIAL THANKS TO

fablab

museum of science+industry chicago

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NSF

ILLINOIS INSTITUTE OF TECHNOLOGY

Interprofessional Projects Program
3300 South Federal Street
Chicago, IL 60616-3793
312.567.3000
http://ipro.iit.edu

FOR MORE INFORMATION, PLEASE VISIT US AT ChicagoFabLab.org

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FABLAB

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TEAM MEMBERS

Nikolai Arendovich
Anthony Bartolomei
Joel Meno
Muqadas Munir
Maksym Ostapenko
Anne Pham
Joseph Sanchez
William Sawyer
Jesse Stepniewski
Terez Sturrup
Jimmy Ton
Patrick Zhu

ADVISORS

Jim Braband
Blake Davis