OpenPool:
Community-based Prototyping of Digitally-augmented Billiard Table

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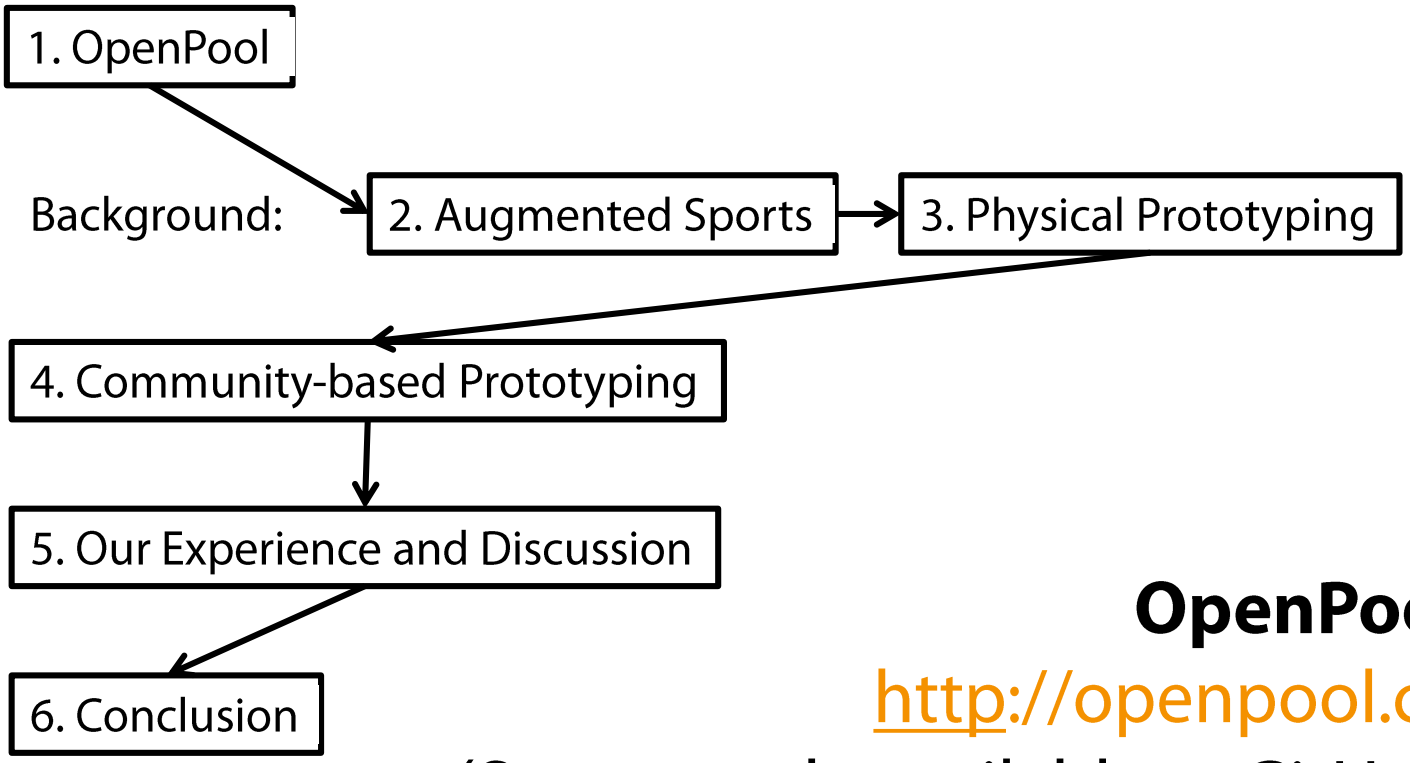
OPENPOOL PROJECT (LAB PRODUCTION INC.)

OpenPool | http://openpool.cc/

TODAY'S TALK



OpenPool:

http://openpool.cc/

(Source code available at GitHub)

OPENPOOL

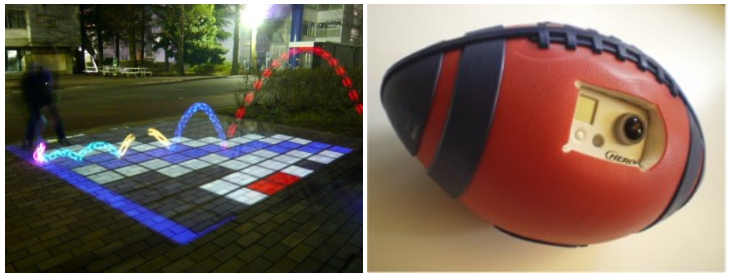

Introduction video can be found on YouTube:
http://www.youtube.com/watch?v=XfiARbbko10

AUGMENTED SPORTS

Traditional computer games: fun but without much social interaction in physical space

Augmented sports: existing sports activities get additional "game content," enabling unique & fun experience

Augmentation of sports environment
PingPongPlus [Ishii, CHI'99]



Augmentation of sports tools
Bouncing Star [Izuta et al., AH'10],
BallCam [Horita et al., AH'13]

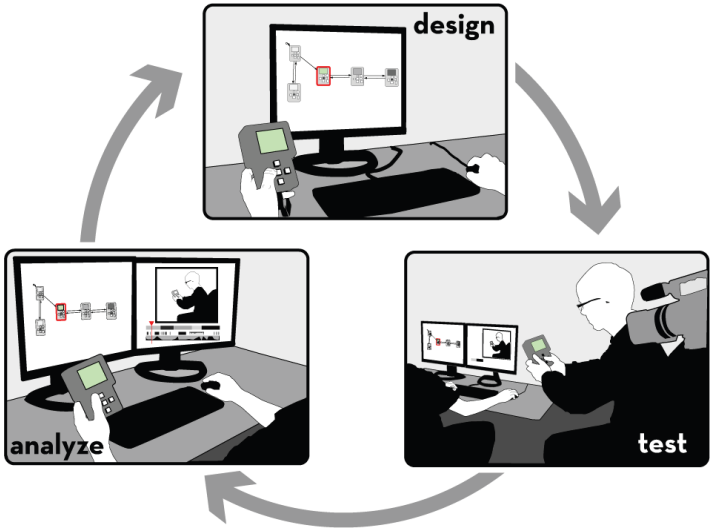
Related discussion in
Computer Supported Collaborative Sports (FlyGuy) paper [Wulf et al., IEEE ICEC'04]

PHYSICAL PROTOTYPING

Iterative cycles of design, test, and analysis

The same designer or team throughout the process

- Prototypes embody design hypotheses of designers
- They allow practical test and analysis
- Iteration is important



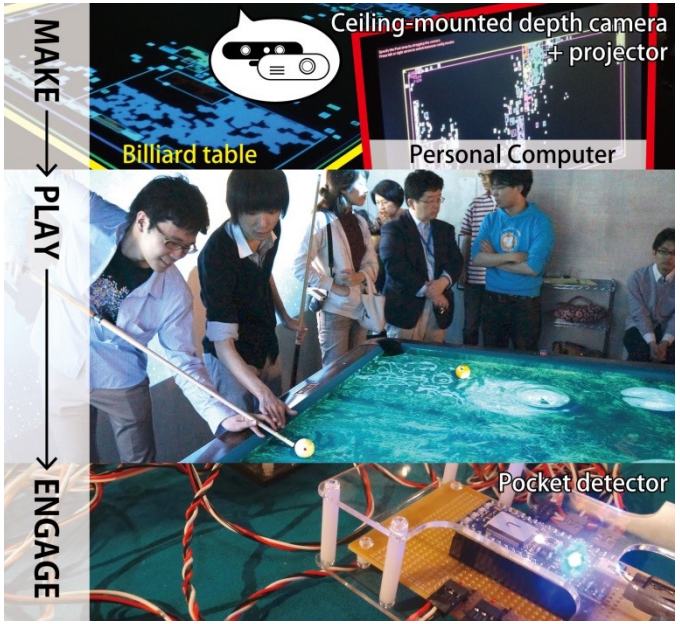
Integrated support for physical prototyping
d.tools [Hartmann et al., UIST'06]

COMMUNITY-BASED PROTOTYPING

Iterative cycles of make, play, and engage

Different members are involved for each cycle

- Prototypes accelerate fruitful collaboration
- They allow smooth transition from a player to a maker
- More involvement means more feedbacks



AUGMENTED SPORTS AND COMMUNITY-BASED PROTOTYPING

(Or keys for driving successful cycles)

1. **Physical location with working prototype**

   A laboratory where the pool table was installed worked as a center of development

2. **Early beta testing with fun**

   Users and even developers played billiards and gave valuable feedbacks

3. **Independent modules in one package**

   Independent yet integrated libraries provide a unique billiard experience visually and aurally

CONCLUSION

- **We defined "Community-based Prototyping"**
  - Iterative cycles of make, play and engage (Physical prototyping: design, test and analyze)
- **As an example project, we developed "OpenPool"**
  - Digitally augmented billiard table
  - http://openpool.cc/
- **Our experience showed that augmented sports is a good platform for community-based prototyping**

BACKGROUNDS FOR SUCCESSFUL COMMUNITY-BASED PROTOTYPING

Prototyping for the fixed goal (e.g. products)

- Each team member has his own role but shares the same goal
- Design decisions should be consistent throughout the prototyping process

Prototyping for the open goal (our case = oss)

- Each team member has his own expertise and own goal
- Design decisions are always made by how prototypes work (not based on particular members' intention)