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

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OPENPOOL PROJECT (LAB PRODUCTION INC.)

http://openpool.cc/
TODAY’S TALK

1. OpenPool

Background: 2. Augmented Sports → 3. Physical Prototyping

4. Community-based Prototyping

5. Our Experience and Discussion

6. Conclusion

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

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

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