Startups and business accelerators as Human-Centred Software Engineering venues

Filip Kis, Cristian Bogdan

Media Technology and Interaction Design
KTH Royal Institute of Technology
Stockholm, Sweden
Startups

Nomadic work
Fast and iterative processes
Bleeding edge technology
Strong community
Fail often, fail fast, fail cheap

Importance of validation and learning

"Throw away" prototypes (the beta effect) vs. enterprise (engineered) solutions

UX is the king
Testing with users

A/B testing

Recoding of everything (events, full sessions, etc.)

Interactive help desks (direct contact, surveys, etc.)
SE as a Service

New form of outsourcing

Everything is in the cloud

Servers, E-mailing, Content-delivery, Analytics, Push notifications, etc.
Open software and Hardware
Community

Accelerators, co-working spaces, meetups

Sharing the know-how and resources
HCSE and startups?

What can HCI (Human Computer Interaction) and HCSE (Human-Centred Software Engineering) learn from startups?

What can HCI and HCSE do for startups to achieve even leaner prototyping and engineering cycles?
How can the startup rapid development be assimilated with and learn from evolutionary prototyping?

How can app-creating startups benefit from HCI expertise for discount usability evaluation?
What are the requirements in the startups?
What is the process?
What are we doing

Evolutionary Prototyping of User Interfaces for Data Applications
Web UX trends (and tech challenges)

Responsivness

Real-time collaboration

Data from various sources
12,465 APIs

According to programmableweb.com
var async = require("async");

User.find(userId, function(err, user){
  if (err) return errorHandler(err);
  User.all({where: {id: {$in: user.friends}}}, function(err, friends) {
    if (err) return errorHandler(err);
    async.each(friends, function(friend, done){
      friend.posts = [];
      Post.all({where: {userId: {$in: friend.id}}}, function(err, posts) {
        if (err) return errorHandler(err);
        async.each(posts, function(post, donePosts){
          friend.posts.push(post);
          Comments.all({where: post.id}, function(err, comments) {
            if (err) donePosts(err);
            post.comments = comments;
            donePosts();
          });
        }, function(err) {
          if (err) return errorHandler(err);
          done();
        });
      }, function(err) {
        if (err) return errorHandler(err);
        render(user, friends);
      });
    });
  }, function(err) {
    if (err) return errorHandler(err);
  });
});
Tech trends

Web components

Declarative approaches

Reactive programming

JavaScript Libraries
ToDo App

Your current tasks

- Write a VL/HCC paper
- Book flight

Create a new task

Add task

```html
<div data-provider="firebase" data-from="TodoList item"
     data-where="item.done = false" data-auto-update="true">
  <input data-value="item.done" type='checkbox'/>
  <input data-value="item.name"/>
</div>
<input data-value="newTask"/>
<button data-provider="firebase" data-insert-into="TodoList"
        data-click="insert({name:newTask, done:false})">
  Add task
</button>
```
Remaining challenges

Understanding the data (APIs)

Advanced interaction and full CRUD

Learnability

Evaluation in a context
The context: Tech startups

Nomadic work
Fast and iterative processes
Bleeding edge tech
Strong community (meetups, incubators, etc.)

UX Trends:
Responsiveness
Real-time collaboration
Data from various sources

Tech trends:
Web components
Declarative approaches
Reactive programming
JavaScript Libraries
Challenge for you

HCD process in startups?