Effortless Interfaces for Appified TV

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TV is..

Just works
Turns on in an instant
Others will have watched what I watch
Episodic; Structured
Not demanding
TV is ..

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4B users

$70B ad rev

needs interactivity to grow
Users want interactive TV..

Television lends itself to social-network multitasking more than any other medium does. While watching TV:

- 79% always or sometimes visit Facebook
- 83% surf the web on sites other than social networking sites
- 41% tweet about the show they’re watching

Of those who post about TV shows, 76% do so while watching programs live and 51% post on social networking sites while watching TV to feel connected to others who might be watching.

On average, social networkers multitask 3 of every 5 times they visit a networking site.

THR Study 2012
Interactivity on TV = Limiting

content

device

Developer View
quirky s/w platforms
open ecosystem
low middleware headroom
slow iteration
Interactive TV. Dispersion across screens

rendering

interactivity

separate & synchronize

Automated Content Reco. (ACR)
Other.

behind Moore’s
Interactive TV. Atomization into Apps

No new learning curve

Familiar & fast ways to create | publish | iterate capability

Own analytics & customer
Dual Screen adoption?

80% of respondents are mobile multitasking while watching TV.

GigaOm. TV Apps: Evolution from Novelty to Mainstream

2011. 200-250 apps (Android+iOS)
2012. ~1500, 2/3rd social

with promising content proof pts..
this paper ..

Growing app population

Limited user attention

Retaining the lightweightness of TV in an appified world.

Just works
- Turns on in an instant
- Others will have watched what I watch
- Episodic; Structured
- Not demanding
Characterizing TV Apps.

(1st screen) content = user ‘app intent’

app exposure | invocation triggered by content specifics
channel (ESPN2) | pgm (SportsCenter)
| league (NFL) | episode

app invocation triggered by content sync point
specialized detectors (e.g. ConnecTv TV timeout)

app data
parameterized by program metadata (e.g. Twitter hashtag)
parameterized by program data
visual conversations (visual q&a, telestrator),
image scramblers
Characterizing TV Apps

Possibly ephemeral (e.g. Oscars App)
- affects temporality|priority of recommendations

Interstitial & Re-entrant (vs session-to-completion)
- suspend-resume support in app platform

Designing for Partial | Divided Attention
- auto-configure UI to device modality, environment

Concurrent
- not common in Tablet UI’s : recent increase in focus
App Framework

Few TV containers | Numerous Apps

Container Services
scoped recommendation  
1st screen sync & share (metadata + data)

suspend-resume
auto-configuring UI (context)

..
Auto-configuring UI Support : Design Focus

Adaptation = power tool for app developer 
  not user knob

Sufficient expressive power with minimal learning curve 
  not maximally expressive (constraint language), high learning curve, high non-determinism in result

Converging to ‘good’ adaptation rules thru faster trial & error 
  not necessarily provably good
Auto-configuring UI Support : Design Focus

Sufficient expressive power with minimal learning curve

Simplify information model : quantize context parameters

Adaptation rules (ultimately) CSS3 Media Queries like with context pred

App context wrapper determines (dis)allowable reconfigurations

Container chooses within the permissible set

Converging to ‘good’ adaptation rules thru faster trial & error

Record & replay synthetic or real context streams against app collectives

Capture and annotate app behavior for design storytelling
Ongoing ..

• User study (mixed interface – sports TV + core tablet apps e.g. email)

• Understanding synchrony vs designed dissonance
  – Use second screen to be in touch with what you’re *not* watching
  – Mixed-app model (Android + Web Apps)
QUESTIONS?

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