



Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg

Maurizio Caon & Maurizio Rigamonti - 2018

Game Design & Development

Gamification + Serious Games

Serious Games Definition

- Serious games can be defined as “any form of interactive computer-based game software for one or multiple players to be used on any platform and that has been developed with the intention to be more than entertainment”.

Ritterfeld, U., Cody, M., & Vorderer, P. (Eds.). (2009). Serious games: Mechanisms and effects. Routledge.

G/P/S Model

(Djaouti, Alvarez and Jessel, 2011)

Gameplay

- ☐ Game-based (*ludus*)
- ☐ Play-based (*paidia*)

Purpose

- ☐ Message broadcasting
 - ☐ *Educative*
 - ☐ *Informative*
 - ☐ *Persuasive*
 - ☐ *Subjective*
- ☐ Training
 - ☐ *Mental*
 - ☐ *Physical*
- ☐ Data exchange

Scope

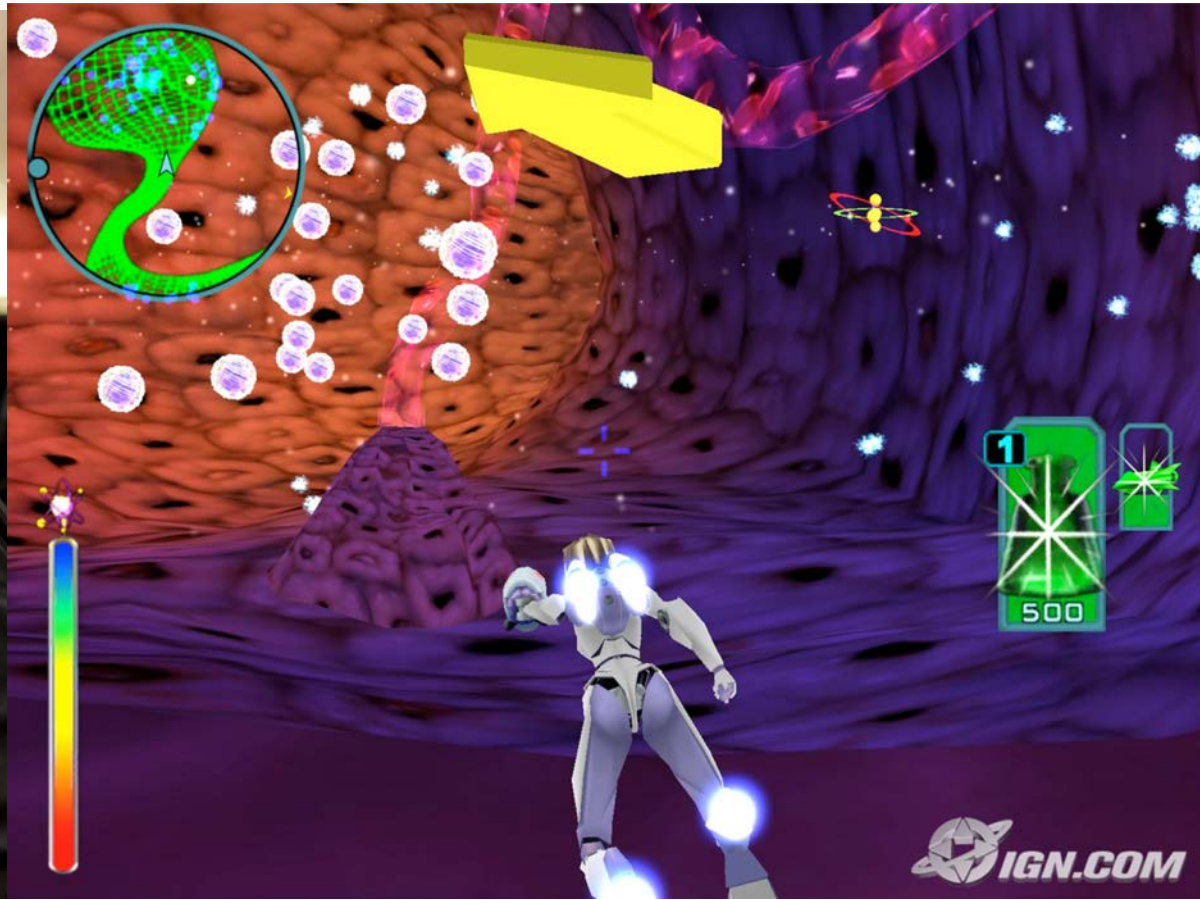
Market

- ☐ State & Government
- ☐ Military
- ☐ Healthcare
- ☐ Education
- ☐ Corporate
- ☐ Religious
- ☐ Culture & Arts
- ☐ Ecology
- ☐ Politics
- ☐ Humanitarian
- ☐ Advertising
- ☐ Scientific Research
- ☐ Entertainment

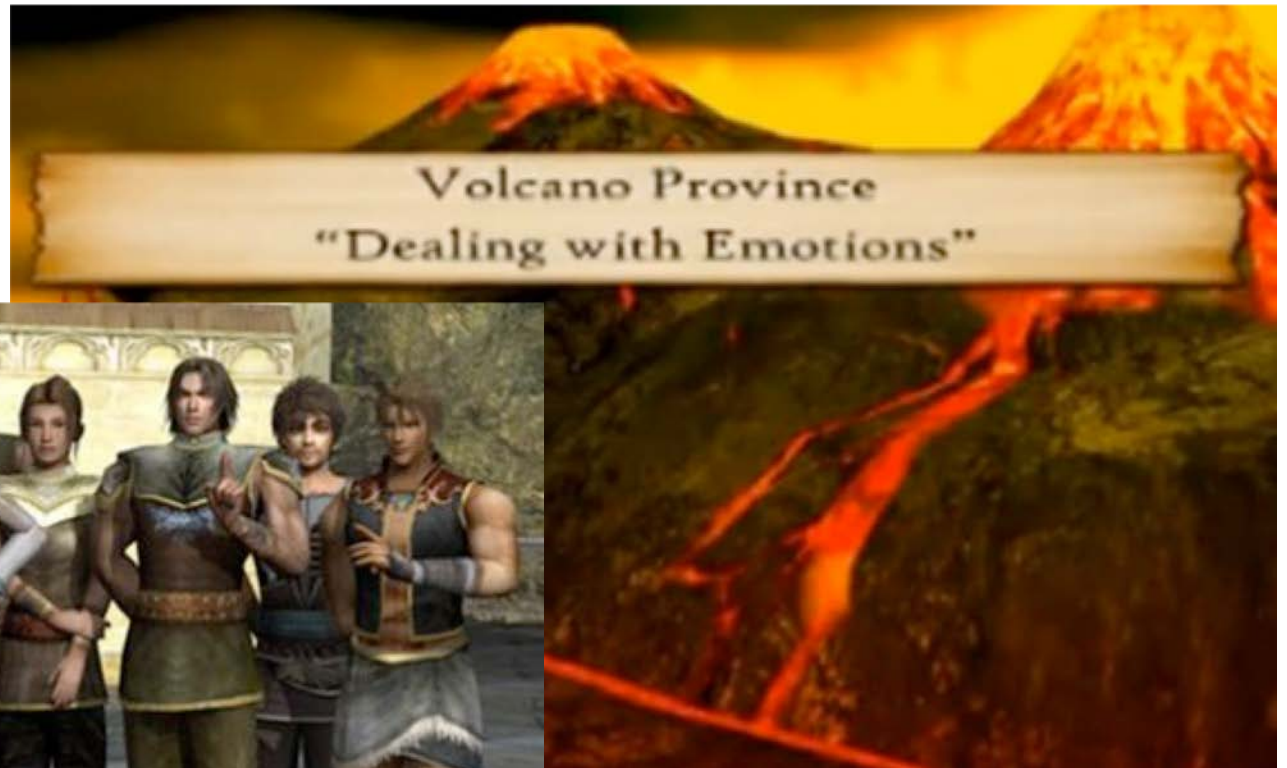
Public

- ☐ General Public
- ☐ Professionals
- ☐ Students

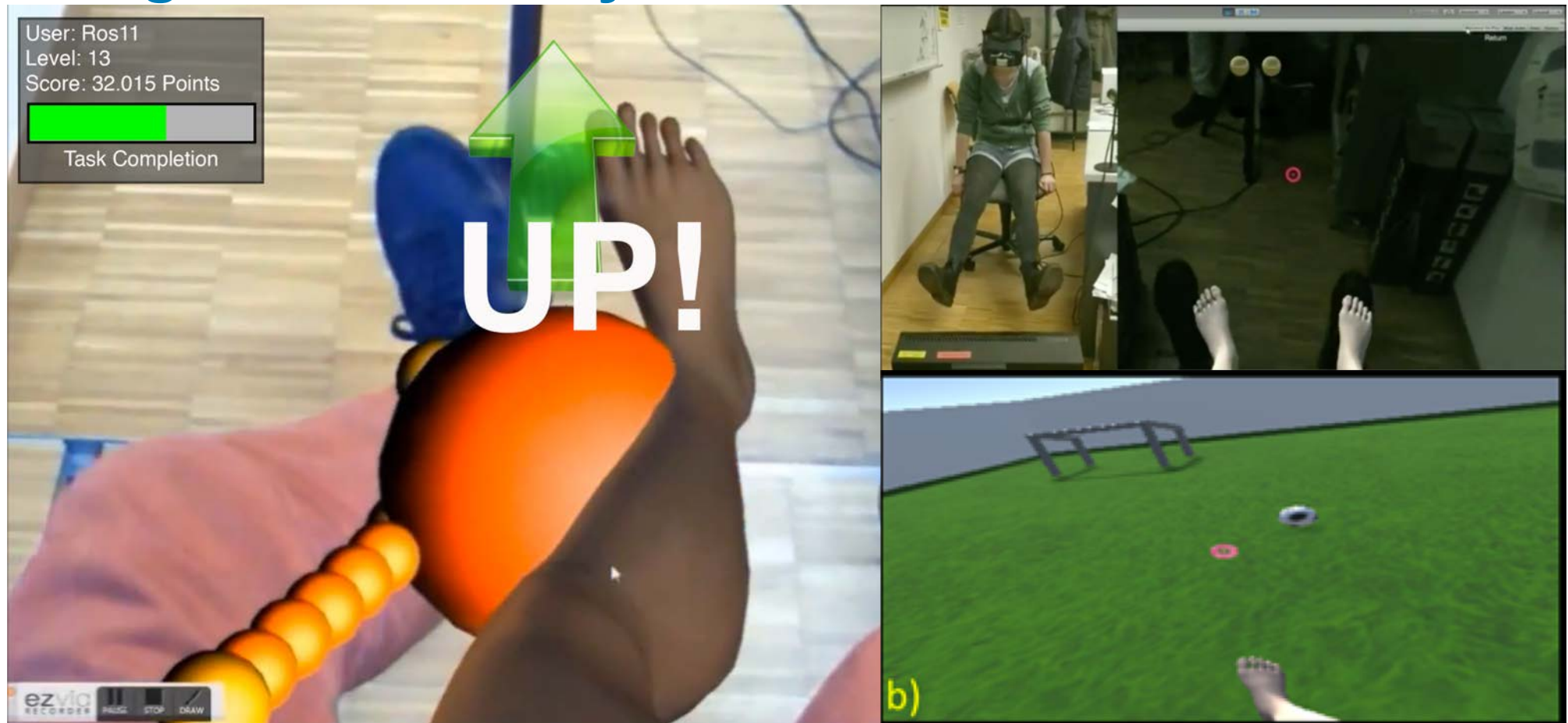
Serious game to fight cancer



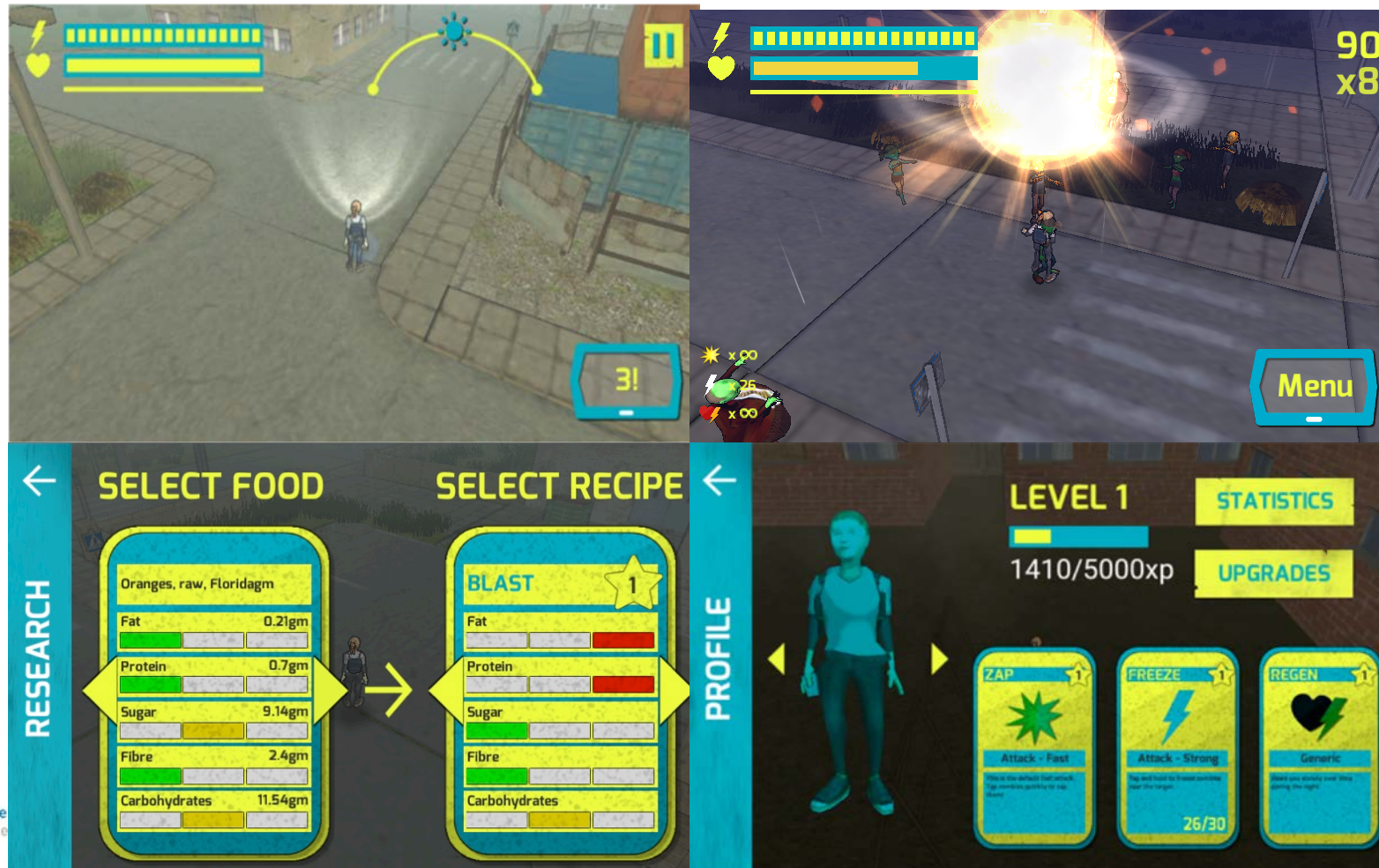
Sparx: fight against depression



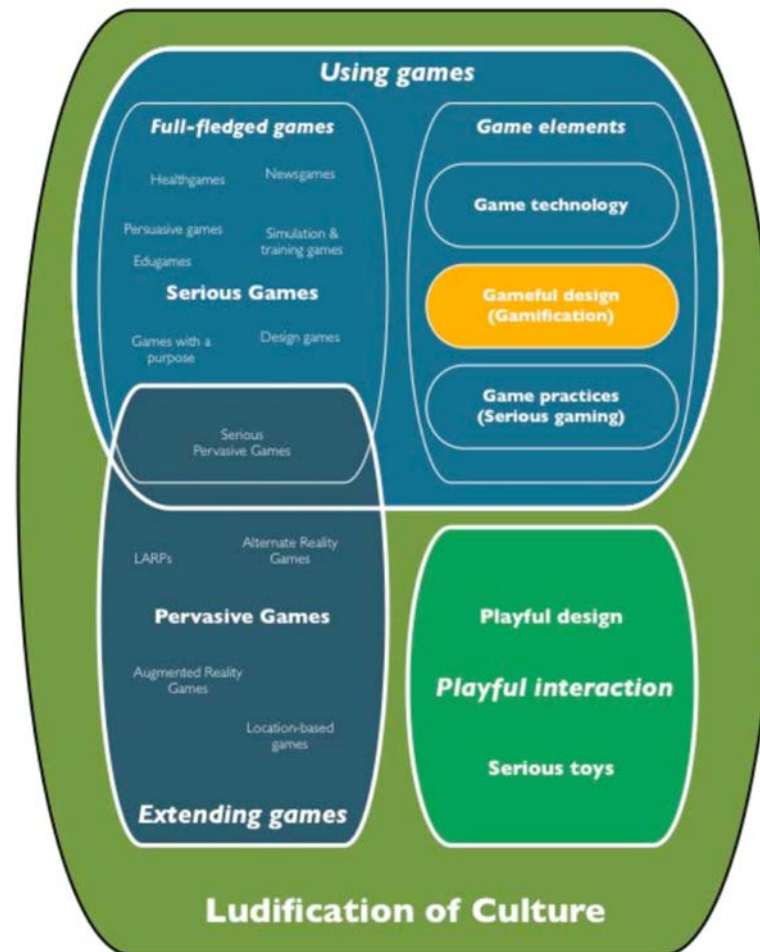
Augmented Reality to reduce Phantom Limb Pain



PEGASO game: promoting healthy habits



Ludification of culture



Situating Serious Games and Gamification



Gamification definition

- Gamification is “the use of game elements in non-game contexts”.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining gamification. In Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments (pp. 9-15). ACM.

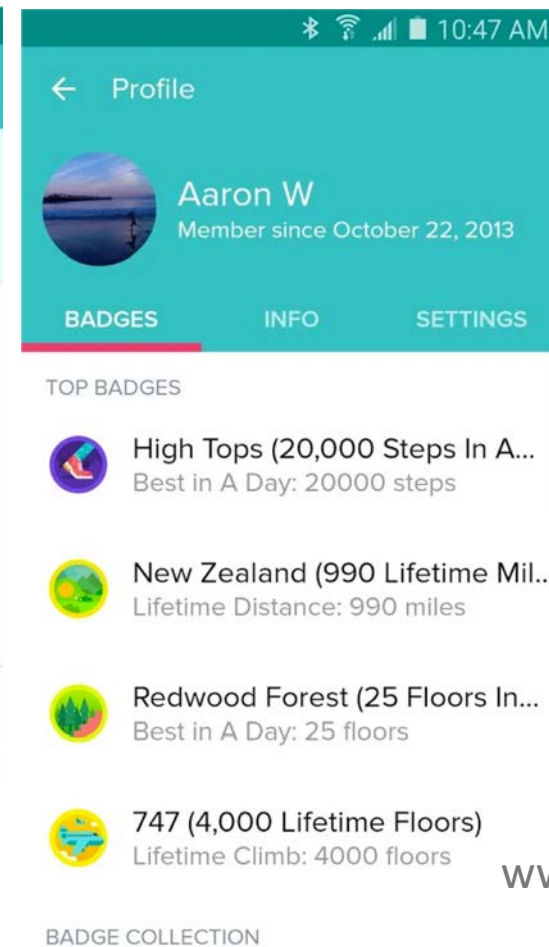
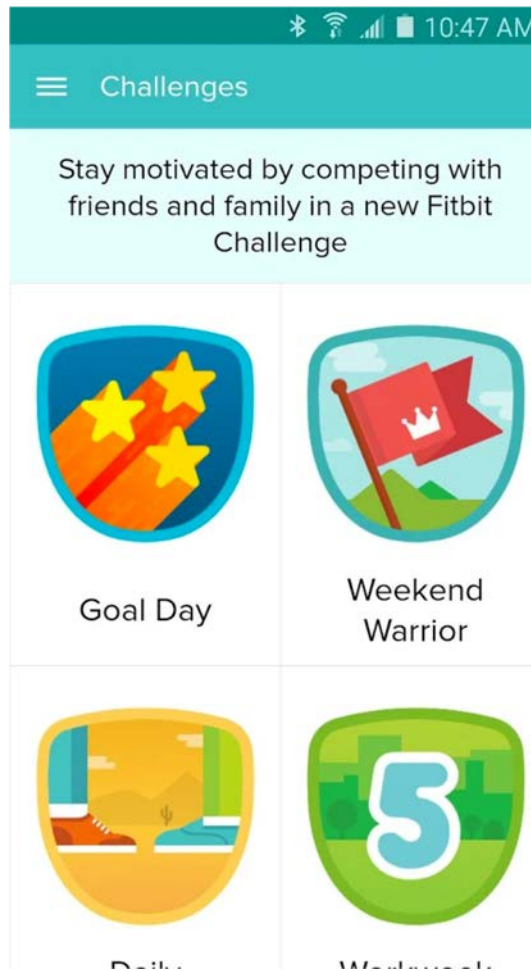
Explaining the definition

- Game elements: toolbox composed of points, badges, leaderboards, quests, resource collection, avatars, social graph, progression, levels
- Game design techniques: more than just elements, purpose of being fun, engineering + artistic approach, a way of thinking
- Non-game contexts: the purpose is something outside of the game

Gamification example: fitbit

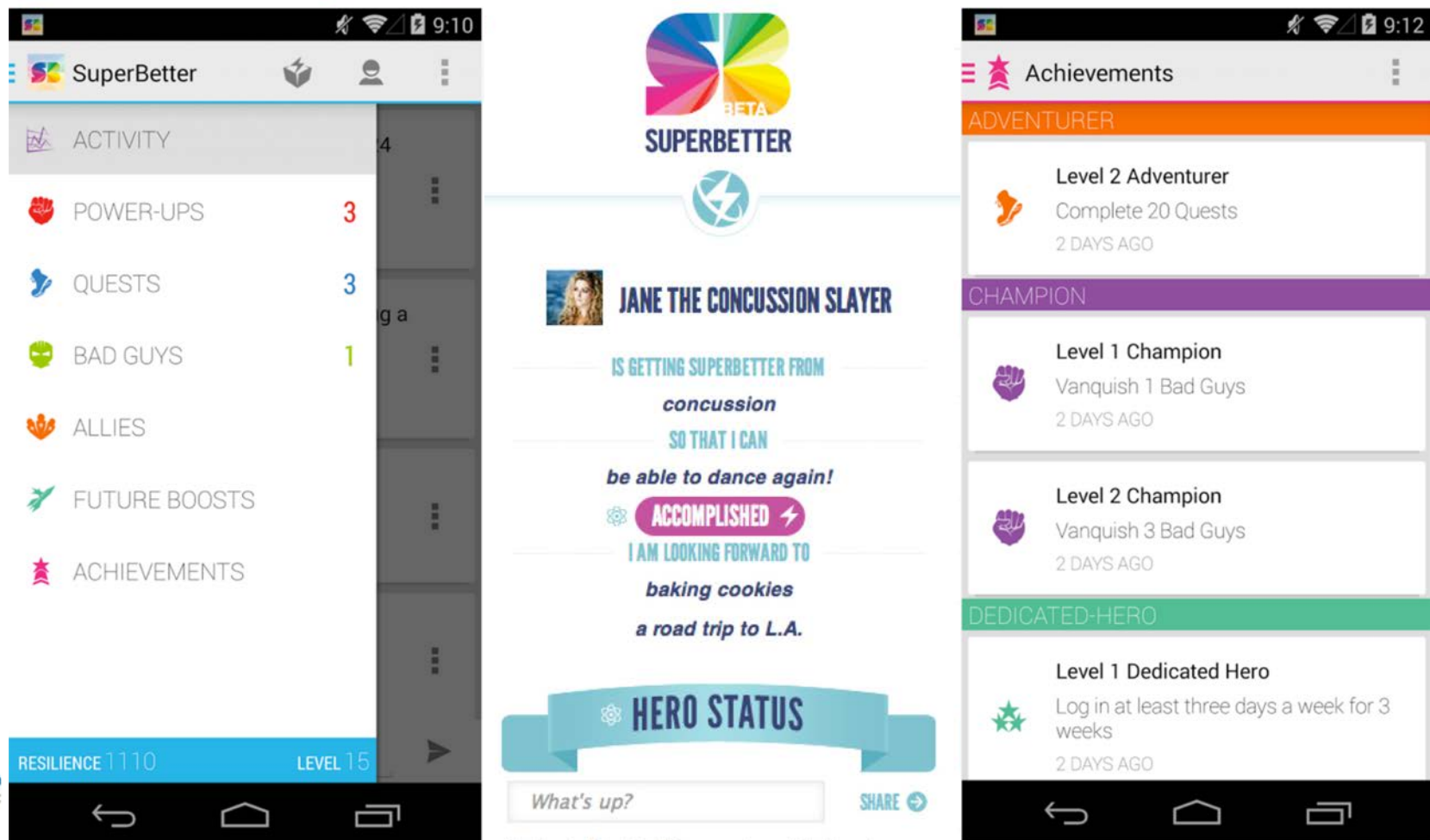


Gamification example: fitbit mobile



www.fitbit.com

Gamification example: SuperBetter



Gamification example: Habitica

The screenshot displays the Habitica mobile app interface for a user named 'lefnire'. The top header shows the user's profile with a character icon, a heart icon indicating 46/50 health, a star icon indicating 124/500 gold, and a shield icon indicating 25/108 mana. Below the header is a row of avatars for friends, each with a level indicator (Lvl 23, Lvl 90, Lvl 69, Lvl 59, Lvl 37, Lvl 35, Lvl 33, Lvl 31). The main content area is divided into four columns: Habits, Dailies, To-Dos, and Rewards. The Habits column shows a list of habits with a 'New Habit' button and a 'Productivity' habit with a history graph. The Dailies column shows a list of daily tasks with a 'New Daily' button. The To-Dos column shows a list of to-do items with a 'New To-Do' button. The Rewards column shows a list of rewards with a 'New Reward' button. The Rewards column also shows a list of items that can be purchased with gold, including 'Golden Scepter', 'Dark Souls Blade', 'Crystal Blade', 'Stephen Weber's Shaft of the Dragon', 'Mustaine's Milestone Mashing Morning Star', and 'Snowflake Wand'. The bottom left corner features the logo for 'Haute école Hochschule'.

lefnire

♥ 46 / 50

★ 124 / 500

🛡 25 / 108

Lvl 23

Lvl 90

Lvl 69

Lvl 59

Lvl 37

Lvl 35

Lvl 33

Lvl 31

lefnire

habitica.com

Habits

New Habit +

+ - Stairs instead of elevator

+ 1 Vegetable

+ - Productivity

History

Score

- 1 Cigarette

Dailies

New Daily +

Productive Work 1h

Read 30m

5 Vegetables

Exercise 20m

Family Time 1h

Meditate 45m

Floss

Bed by 11:30

To-Dos

New To-Do +

Call Mom

Finish Taxes 01/06 0/2

File 1099s

Register on TurboTax

Text:

Finish Taxes

Extra Notes:

Remember to call CPA on Wednesday

Due Date:

01/06/2014

Rewards

New Reward +

10 1h Video Games

10 1 TV Episode

120 Golden Scepter

150 Dark Souls Blade

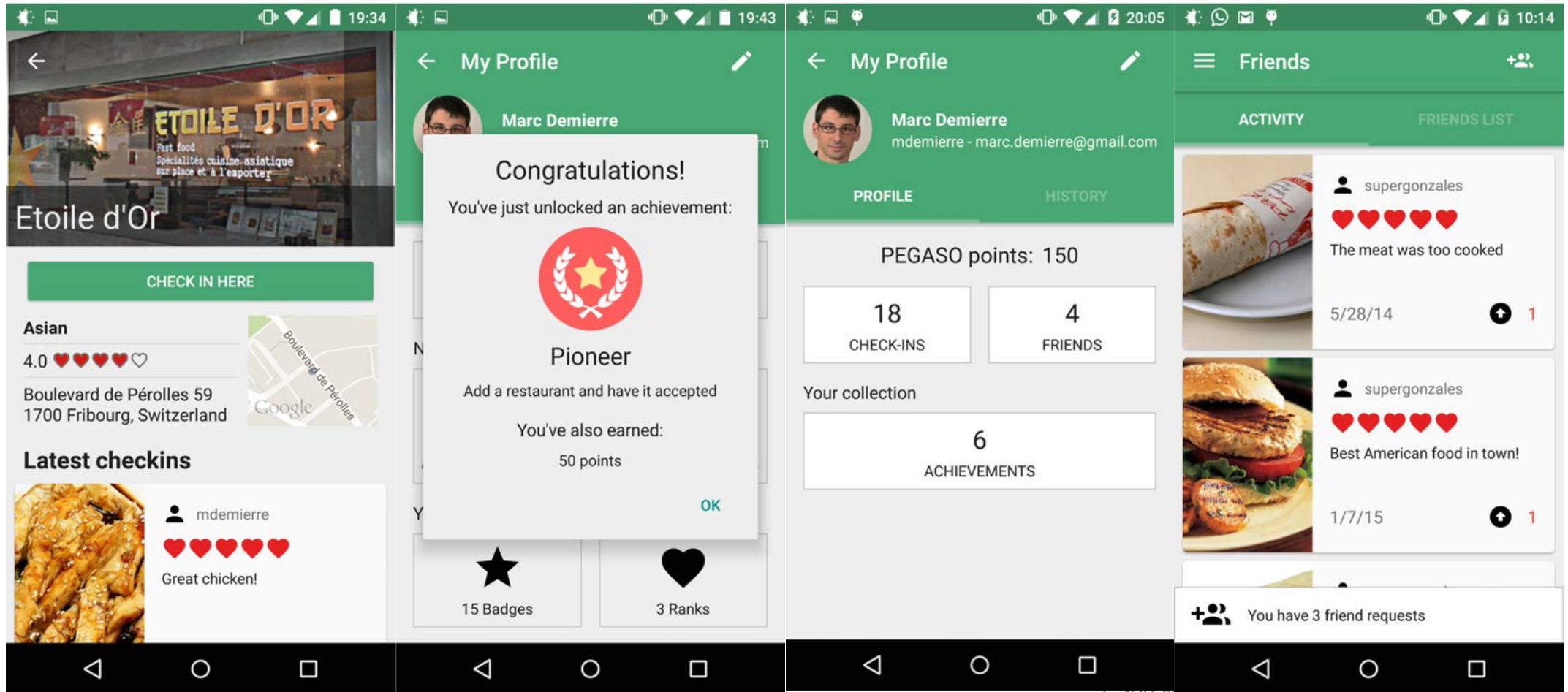
170 Crystal Blade

200 Stephen Weber's Shaft of the Dragon

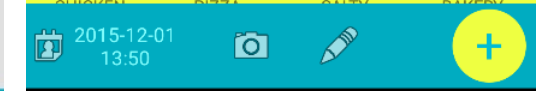
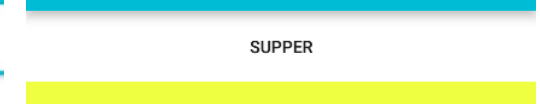
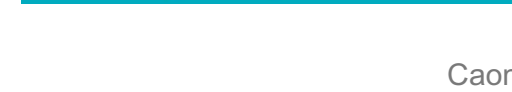
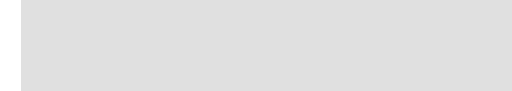
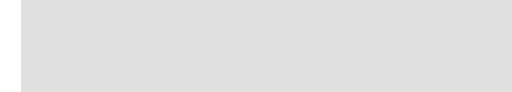
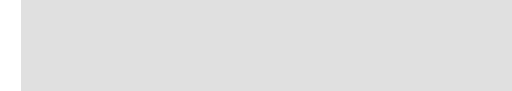
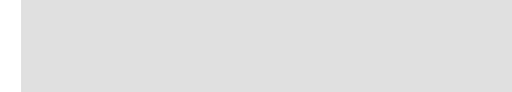
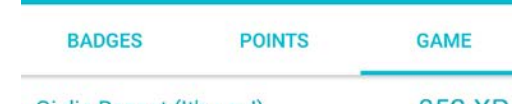
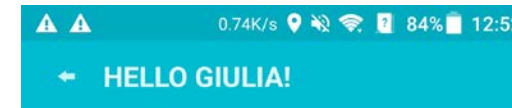
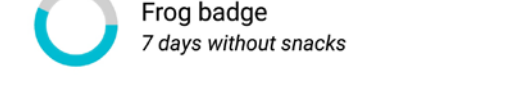
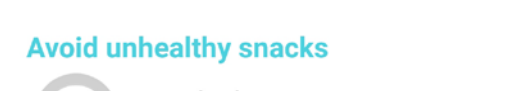
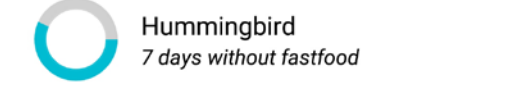
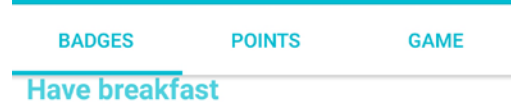
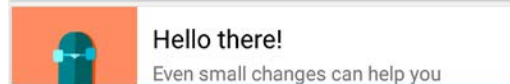
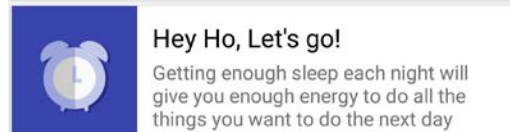
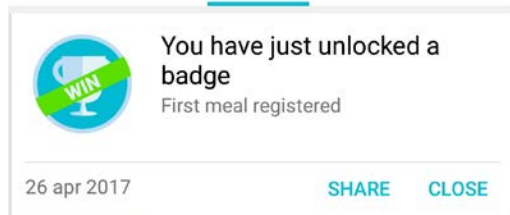
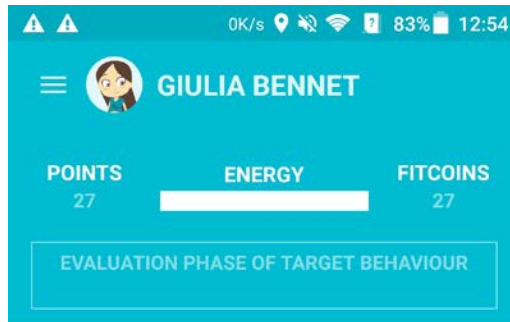
200 Mustaine's Milestone Mashing Morning Star

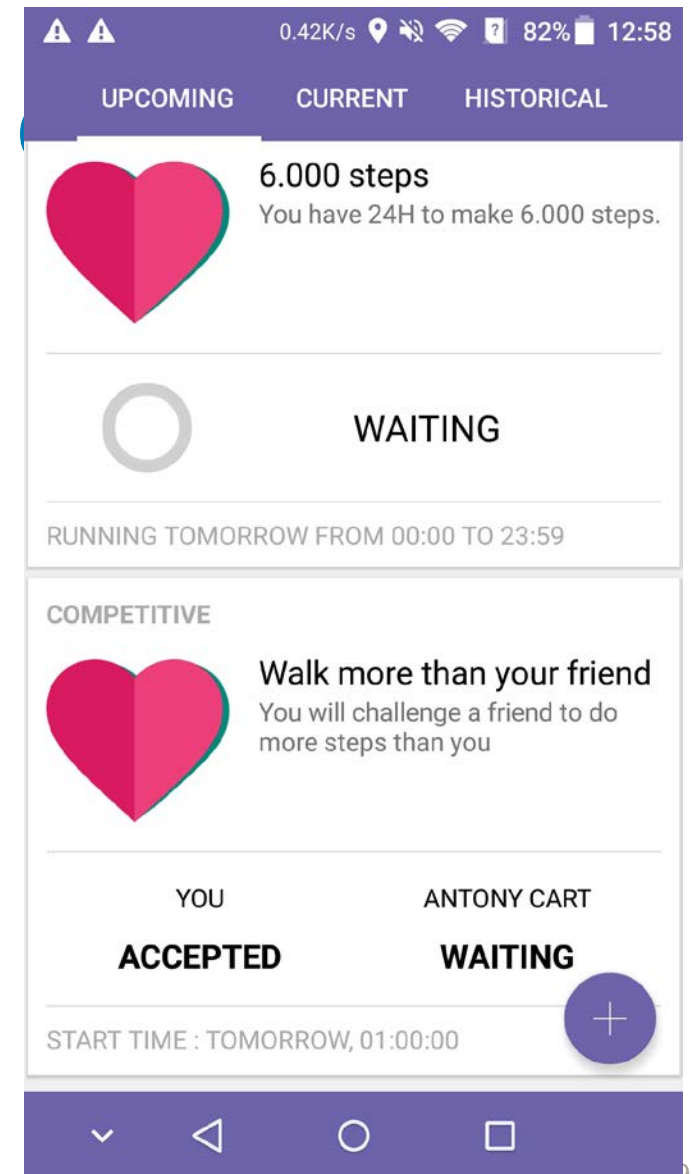
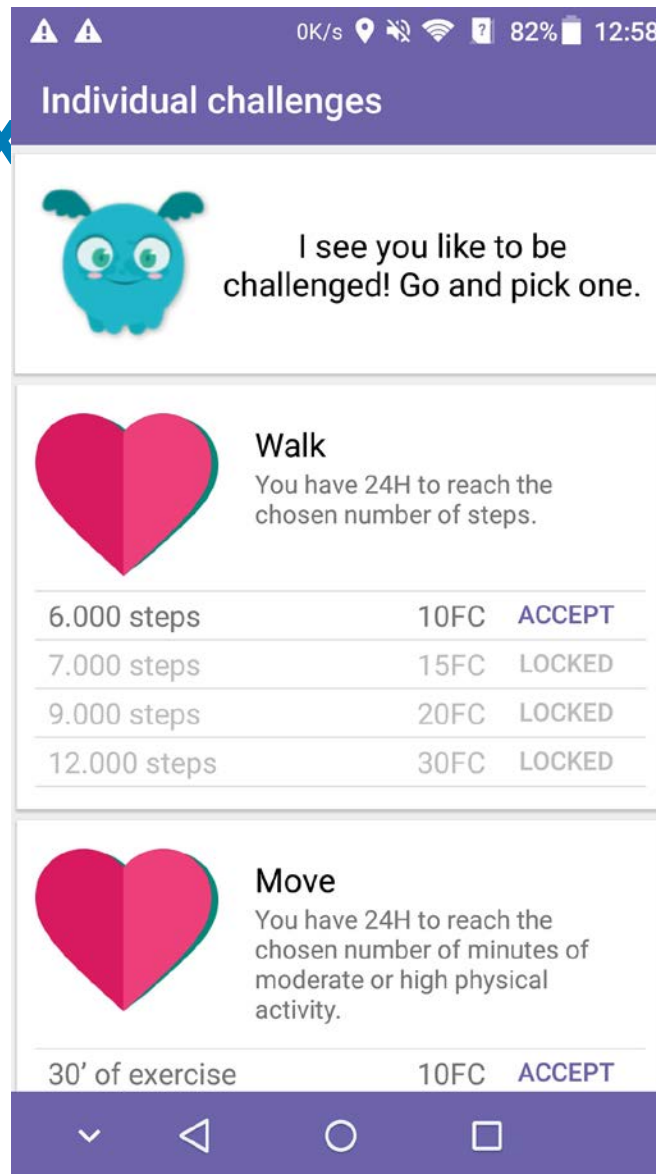
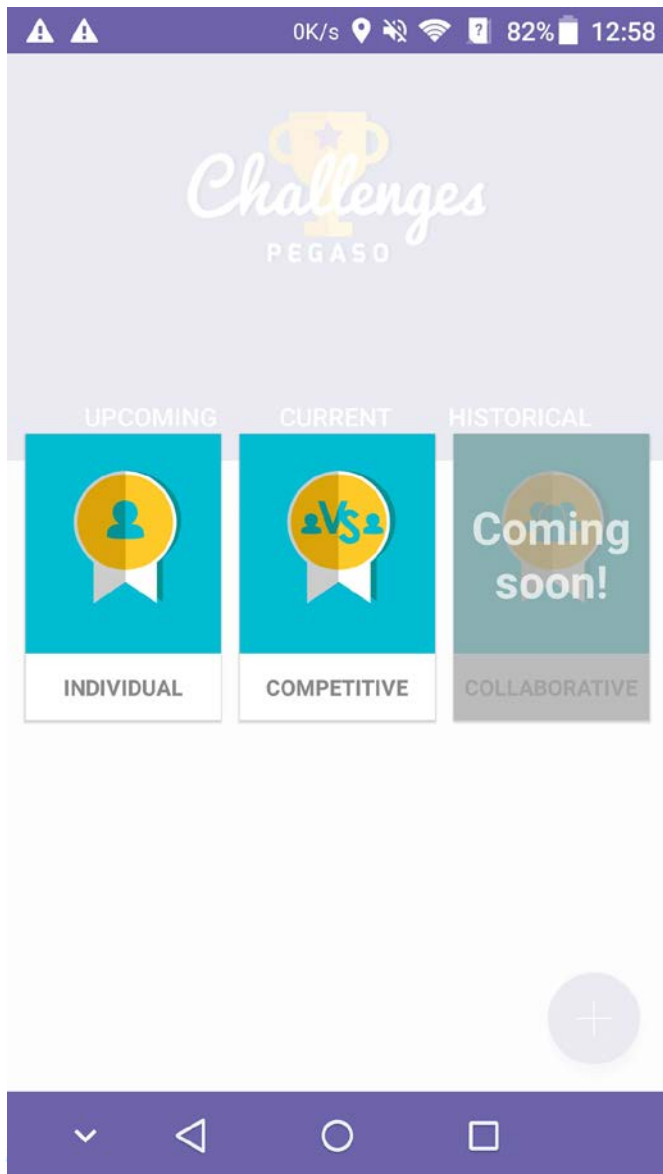
90 Snowflake Wand

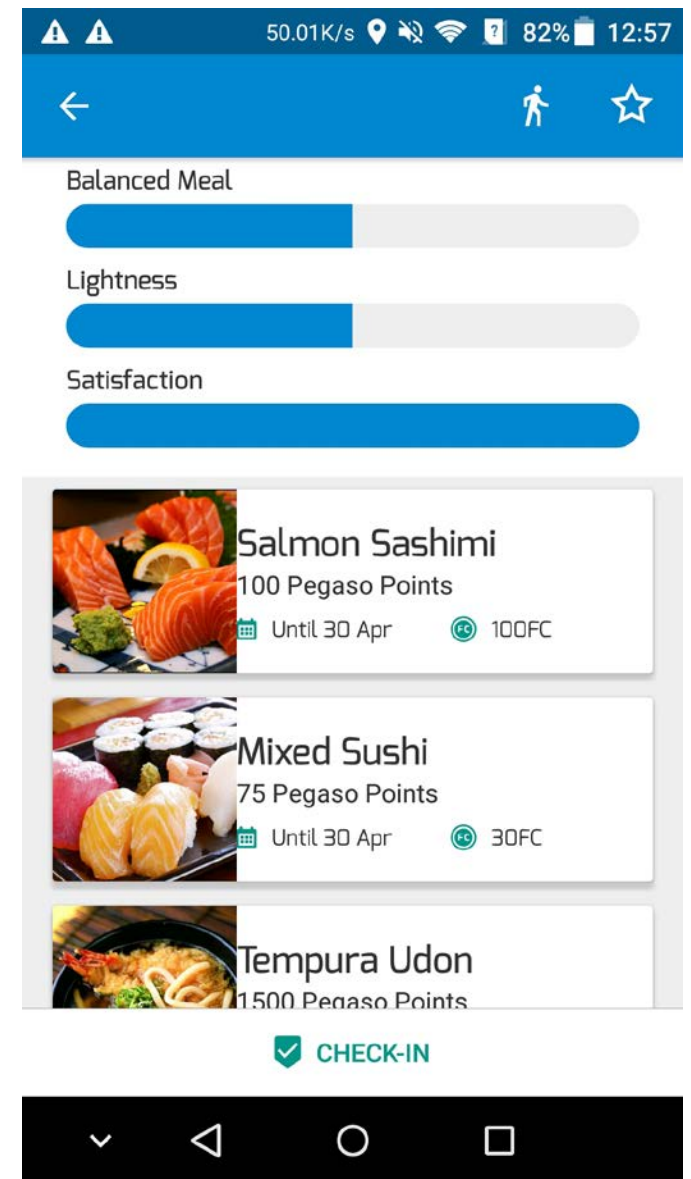
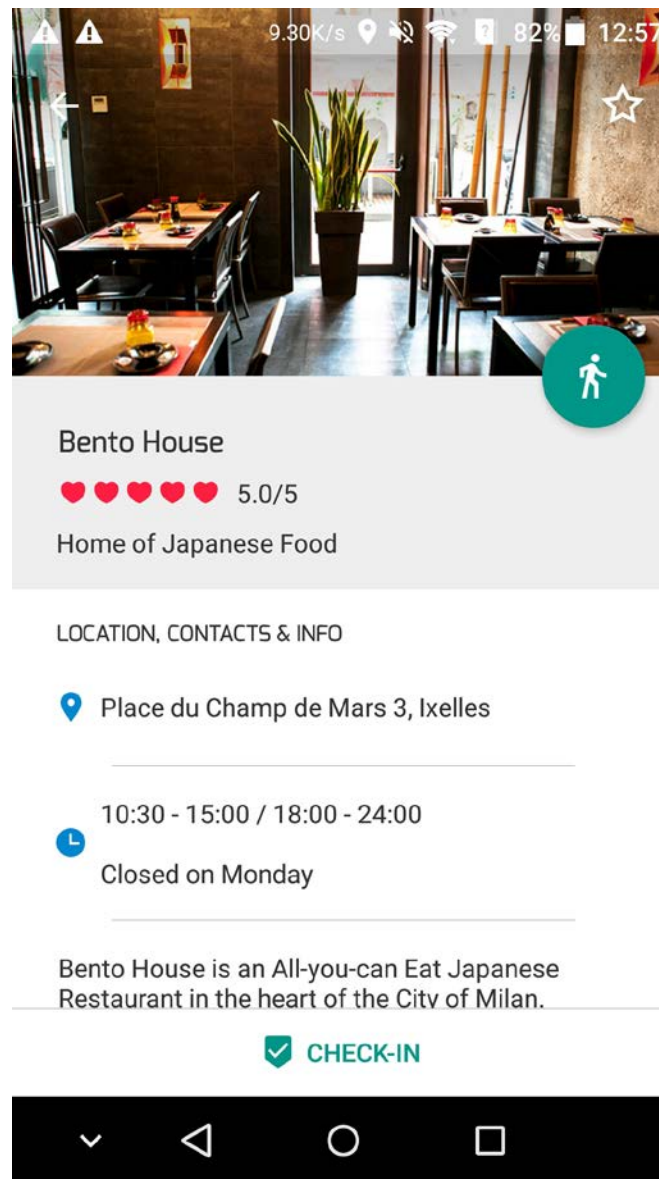
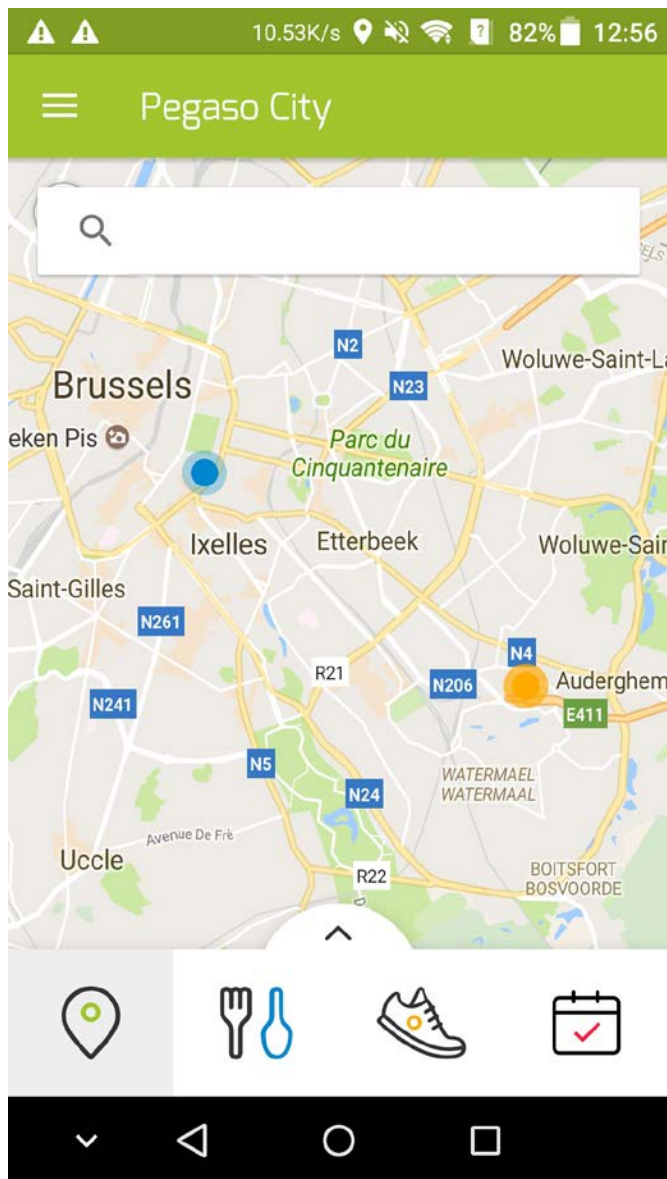
Gamification example: PEGASO HealthSquare



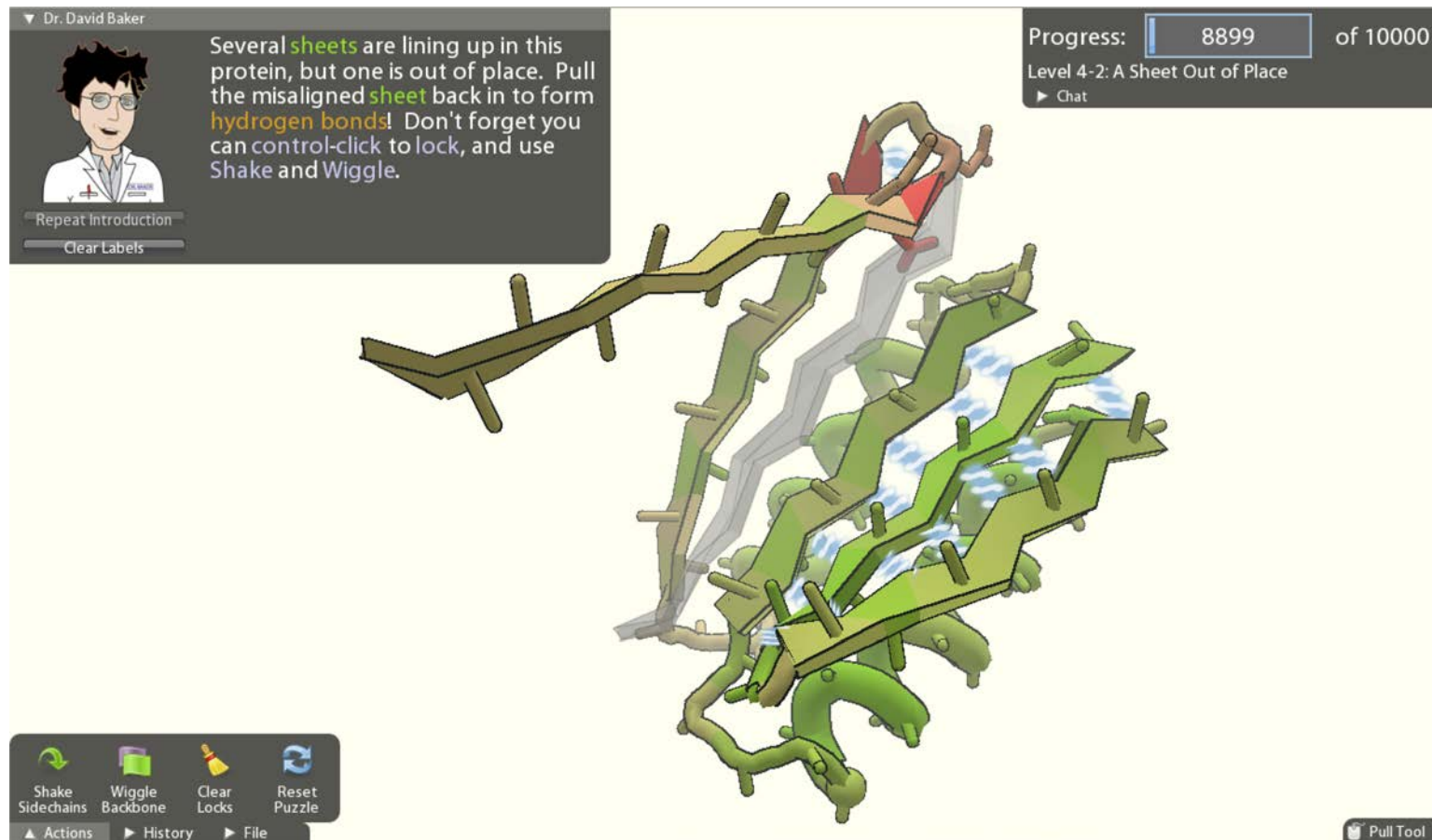
Gamification example: PEGASO Companion







Gamification Example: Foldit



Areas where gamification can add values

- External
 - Marketing
 - Sales
 - Customer engagement
- Internal
 - HR
 - Productivity enhancement
 - Crowd sourcing
- Behavior change
 - Health and wellness
 - Sustainability
 - Personal finance

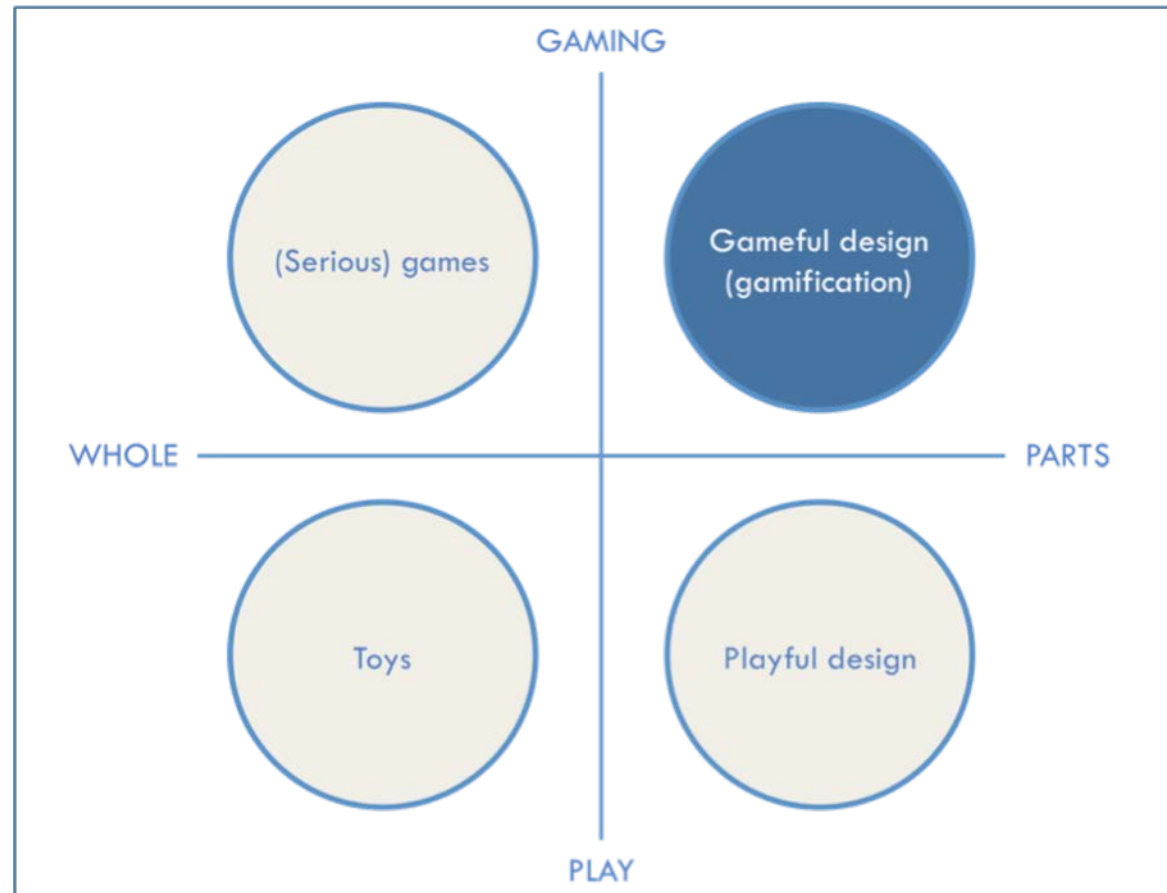
What is NOT

- Gamification is NOT turning everything in a game
- Games used in a business context as for example to sell more is NOT gamification
- Gamification is NOT serious games
- Gamification is NOT just for marketing or PBLs (Points Badges Leaderboards)
- Gamification is NOT game theory, which is a set of algorithms to analyze strategic decision making

Gamification is about

- Listening to what games can teach us about engagement
- Learning from game design (and psychology, marketing and economics – things about motivation and human behavior)
- Appreciating **FUN**

Gamification VS Serious Games



Gaming Vs Play

- Play exuberant energy, activity for its own sake
- Gaming is a series of meaningful choices to obtain an outcome, there are rules where the problem solving is the activity and it is playful


Design Rules

- Designing the Player Journey:
- Onboarding: from when the user hears about the game for the first time to how to get the player into the game
- Scaffolding: how the game provides “training wheels” to help the player to overcome problems and avoid to be stuck
- Pathways to Mastery: the player has to arrive to a point where he has conquered real skills

Werbach, K., & Hunter, D. (2012). For the win: How game thinking can revolutionize your business. Wharton Digital Press.

Farmville Example: Onboarding

You have a group invitation.



Money Tree

Sell for: 100000 Coins
Harvest in: 8 Days

Yours Free

Farmville Money Tree Claim Yours Today!
Internet & Technology - Gaming

You have been invited by ' [blank] '


Would you like to join this group?


Confirm **Ignore**

À : Julien Palier ✕

Ajouter un message personnel

Aperçu :

 **Vous avez une invitation FarmVille.**




Alex Carlier a envoyé une invitation via FarmVille :

Howdy friend! Come be my friend in FarmVille, where you can grow delicious fruits and vegetables on your very own farm!

[Click here! Head on over to FarmVille!](#)

Ignorer

Kirk Hamilton




The old Hamilton citrus orchard is back!

Kirk just expanded their farm in FarmVille 2 and found a new tree! Every farm expansion has a hidden secret! What's the secret?

Like · Comment · Get coins · 10 seconds ago via FarmVille 2 · 🌳

Write a comment...

Kirk Hamilton




Kirk is turning straw into gold!

Kirk just sold their goods in the market stand and made a fortune! Grab some coins and start a farmers market of your own!

Like · Comment · Get coins · 54 seconds ago via FarmVille 2 · 🌳

Kirk Hamilton



Kirk's petting goats in FarmVille 2!

Kirk just learned how to feed goats and get milk in FarmVille 2! Come celebrate and learn to how milk it too!

Farmville Example: Scaffolding



Farmville Example: Mastery



What makes games engaging?

- The emotional component of the experience
- Because they are FUN
- Fun should be designed

Werbach, K., & Hunter, D. (2012). For the win: How game thinking can revolutionize your business. Wharton Digital Press.

Motivational Design

In psychology there are two main trends for motivational design:

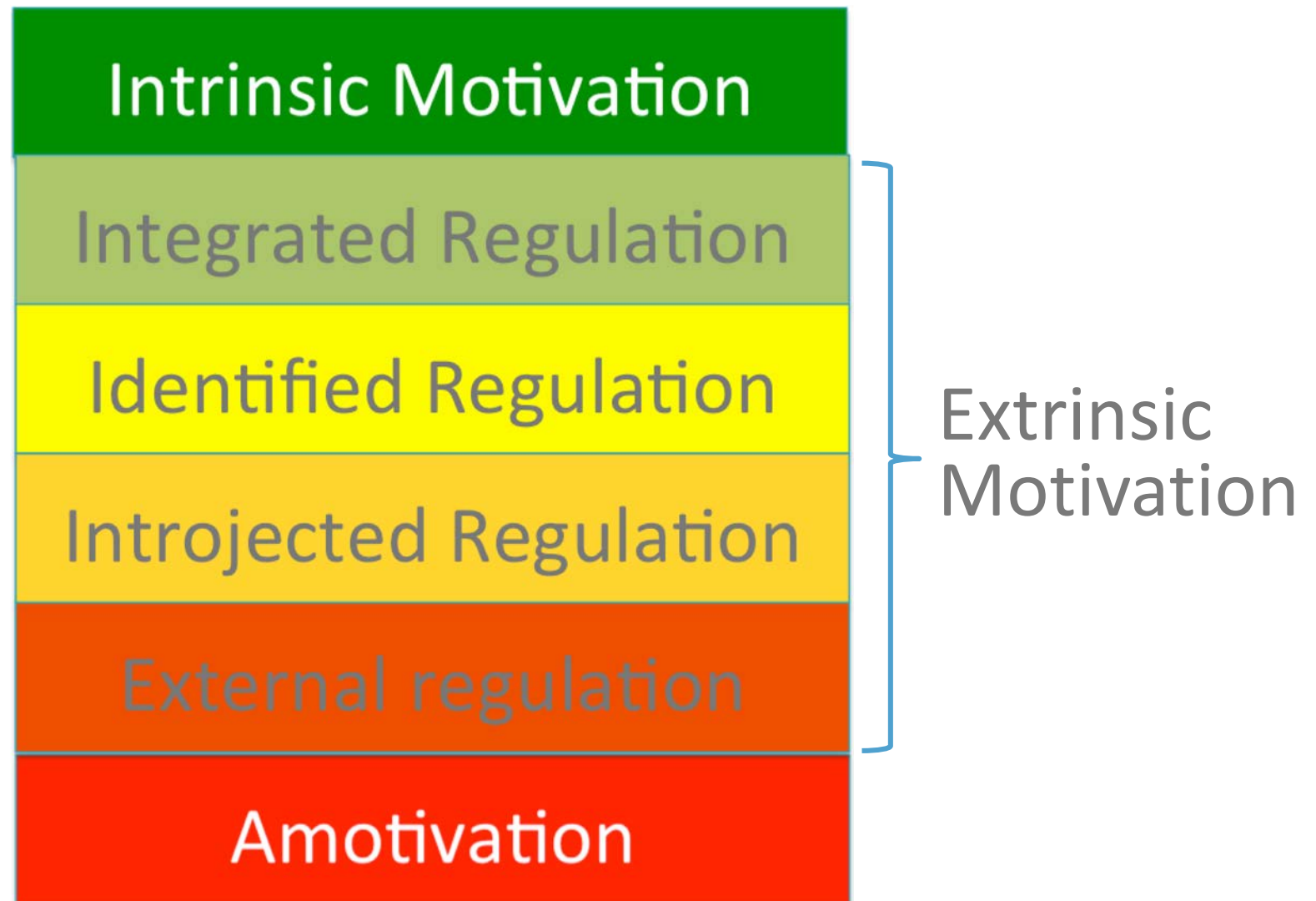
- **Behaviorism:** reinforcement through rewards, which are considered as external stimuli that allow for the release of dopamine in user's brain making the activity pleasant and addicting.
- **Cognitivism:** based on the self-determination theory states that external rewards can solicit just the extrinsic motivation which is less compelling than intrinsic motivation, which defines an internal urge to do something for its own sake, not because of external stimulus but only because the person finds it fun.

Different Types of Motivation

Intrinsic Motivation

Extrinsic Motivation

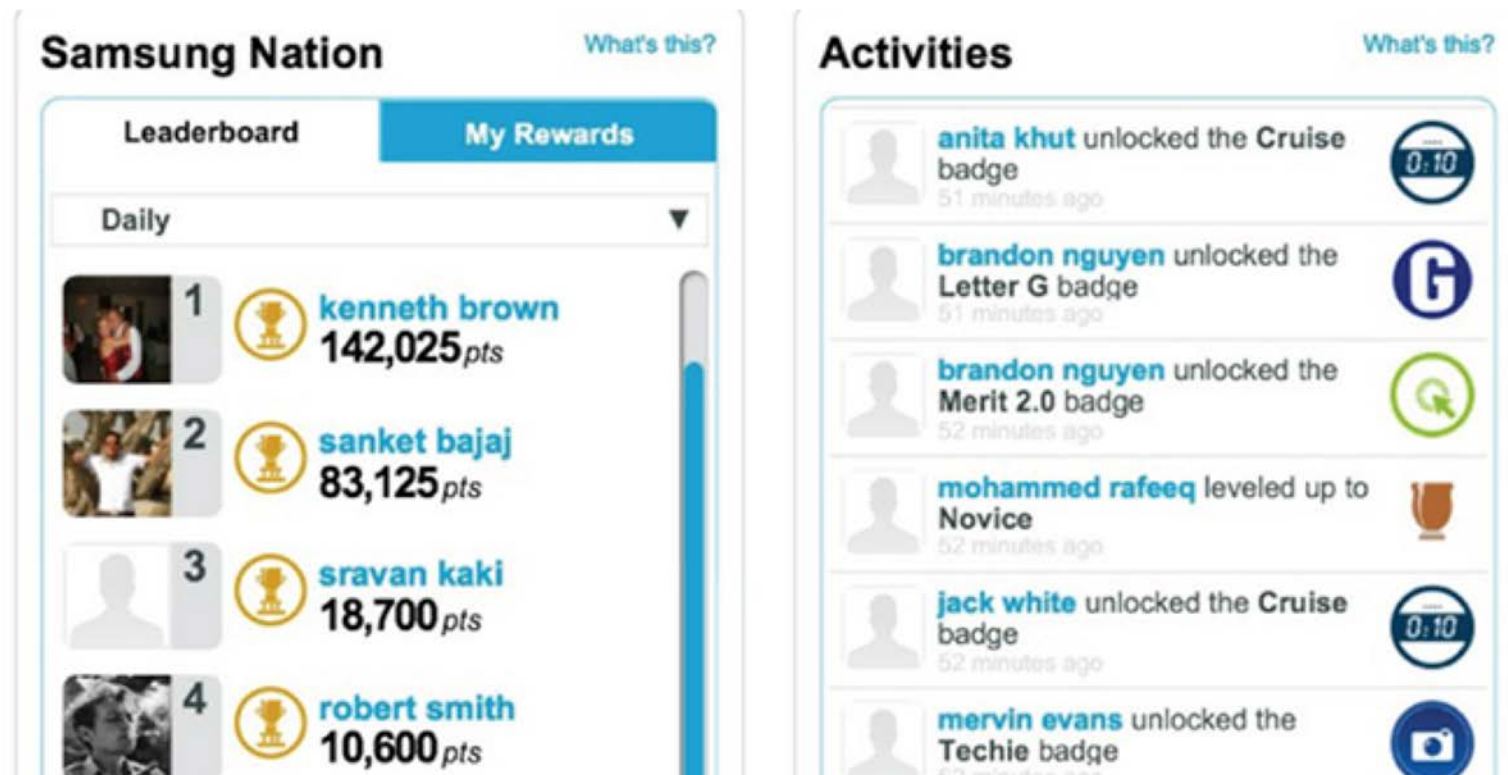
Amotivation



Intrinsic Motivation

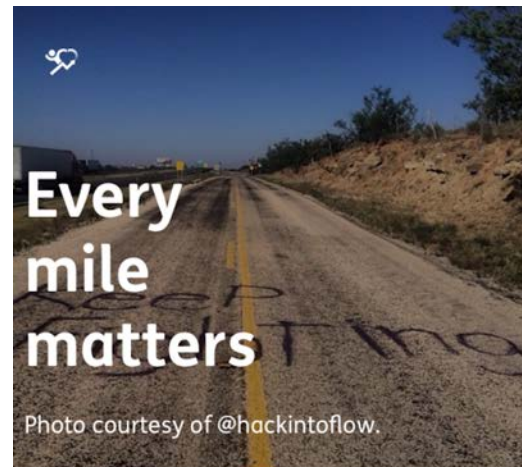
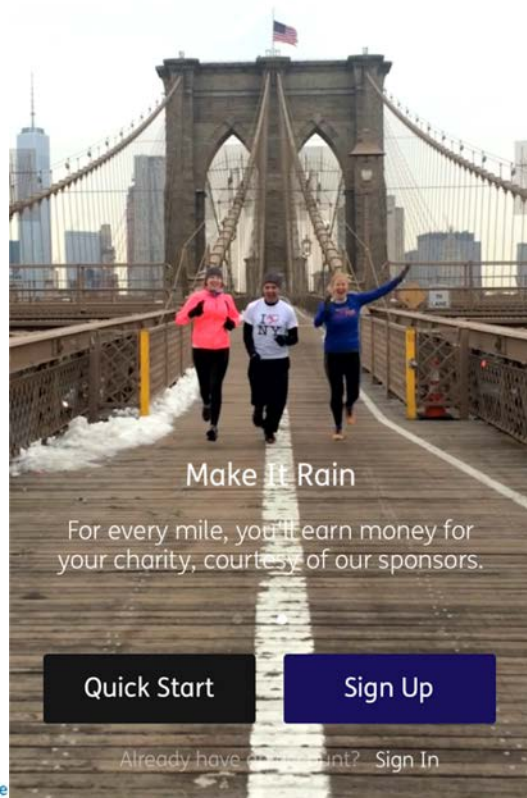
- There are 3 components of intrinsic motivation:
 - **Competence:** sense of people that they are achieving something within the activity
 - **Autonomy:** users have to feel the control
 - **Relatedness:** users' activity is connected to something beyond themselves, a superior good

Example of Extrinsic Motivation Design



Example of Intrinsic Motivation Design

www.charitymiles.org



Wounded Warrior Project
Honor and empower wounded warriors >



Stand Up To Cancer
Cure cancer >



ASPCA
Protect animals >



Alzheimer's Association
Support Alzheimer's research >

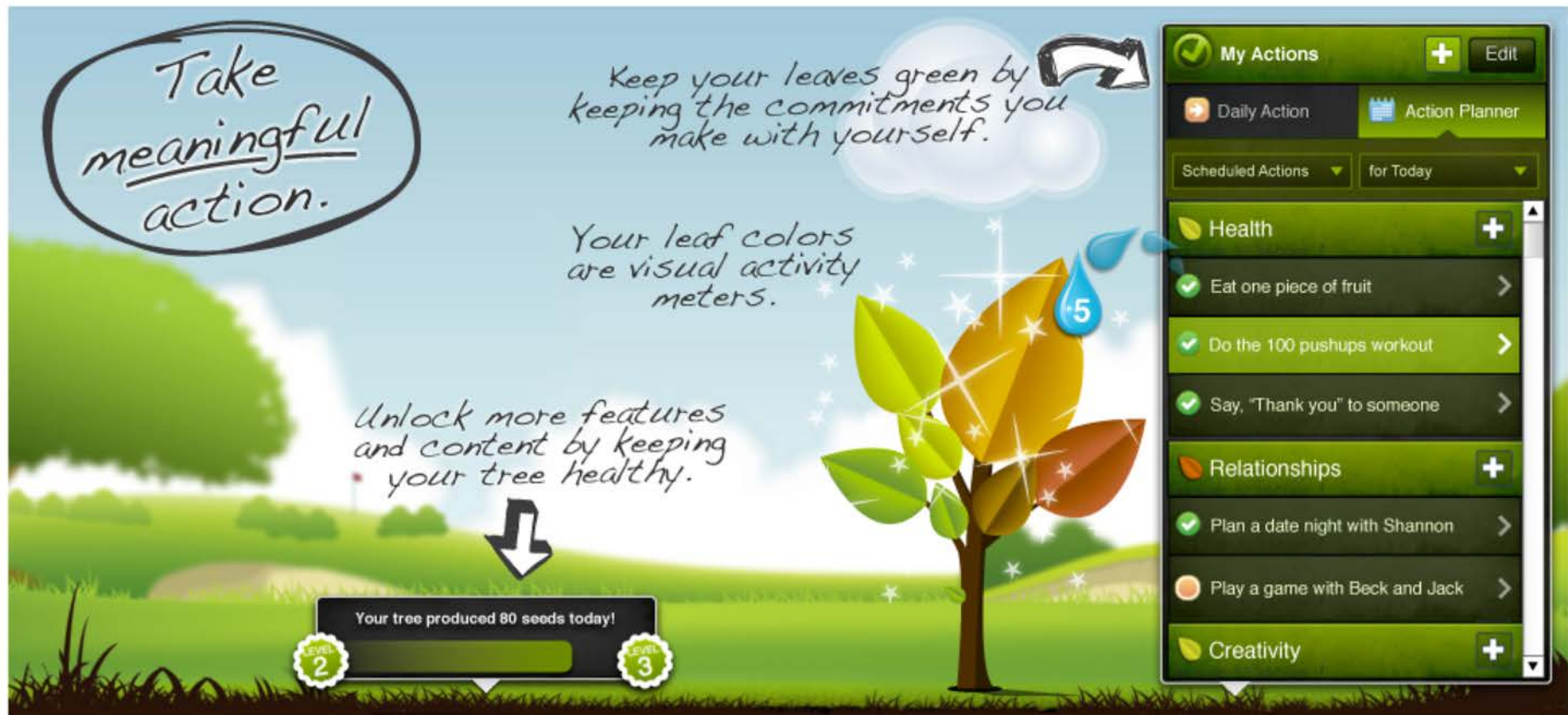


Gamification for Social Good

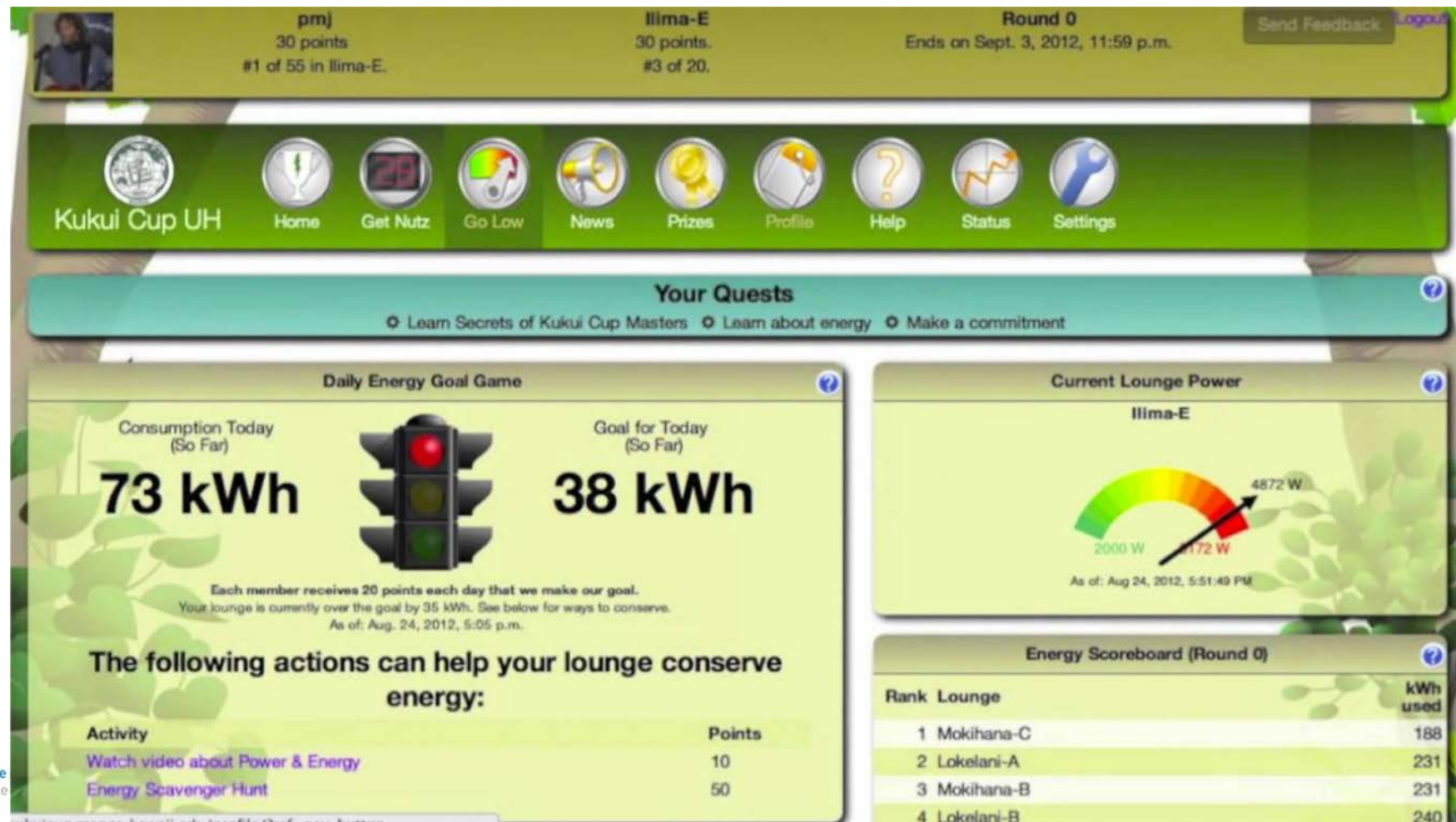
Four categories:

- Health and wellness
- Energy and environment
- Education
- Government

Health and Wellness Example



Energy and Environment Example



Education Example



Questions

Tags

Users

Users

reputation

Type to find users:



Jon Skeet

Reading, United Kingdom

420k • 123 • 1818 • 3121

c#, java, .net



Darin Dimitrov

Rouen, France

299k • 18 • 333 • 543

c#, asp.net-mvc, asp.net-mvc-3



Marc G Forest

Forest

297k • 18 • 333 • 543

c#, .net



Hans Passant

Madison, WI

237k • 16 • 102 • 270

c#, .net, winforms



SLaks

New Jersey

212k • 15 • 286 • 492

c#, .net, javascript



VonC

France

204k • 18 • 333 • 543

git, ecl



Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg

<http://stackoverflow.com/>

Do Swift-based applications work on OS X 10.9/



Will Swift-based applications work on [OS X 10.9](#) (Mavericks)/iOS 7 a

14

For example, I have a machine running [OS X 10.8](#) (Mountain Lion), an application I write in Swift will run on it.



[ios](#) [osx](#) [swift](#)

asked Jun 2 '14 at 19:25

Melr
2,392 • 5 • 16 • 4

2 Answers



Swift code can be deployed to OS X 10.9 and iOS 7.0. It will usually versions.

4



answered Jun 3 '14 at 8:25

Greg Parker
4,511 • 1 • 7 • 15



Apple has announced that Swift apps will be backward compatible v Mavericks. The WWDC app is written in Swift.

3



answered Jun 3 '14 at 0:03

Ben Gottlieb
64.4k • 12 • 146 • 4

Government Example

DWP Department for Work and Pensions **Idea Street**

Welcome Admin Test account | Sign Out | User Guide | User Badges FAQ | Contact Us

Search content and users

Home News **View Ideas** Idea Market Store Leaderboard My Profile

Best of the best:

- Encourage universal use of email signatures: Highest Market Cap
- Scrap the People Performance end of year appraisal: Most Popular Idea
- volunteering champion: Highest Rated Idea
- Jane Deer: Highest Net Worth
- Terry Francis: Most Popular User
- David Clerk: Highest Rated User

Filter ideas by

Category: Author: Keywords:

advanced filter

View Ideas

Recently Updated

Introduce the option to purchase additional annual leave posted by sharon houlton in Shared Services on 28/05/2010 01:24 PM BST

Many other organisations allow staff the option to purchase up to 2 weeks additional annual leave at cost. The cost is pro-rated over the year. Most staff in other organisations take the full entitlement each year. This would be ...[More](#)

17 Threads | 12 Posts | 464 Views | Stage : Investment Time |

Performance Passport posted by Austin martin in Paper Reduction on 16/11/2010 11:32 AM GMT

What is your idea?

Staff locations and job roles often change and it can be difficult for the next manager to make a fair assessment of the quality of the work produced in the previous few months, when a member of staff ...[More](#)

3 Threads | 0 Posts | 42 Views | Stage : Buzz

Test Check posted by edwardWinkler in Shared Services on 11/11/2010 01:04 PM GMT

What is your idea?

Dear All

Although we all hate a Test Check I feel we all also understand why they are used.

Post an idea

Got a great idea? let us know about it!

Admin Test account

Join Date: 23/10/2009

Posts: 12

Views: 2978 Times

Available DW-Peas: 76,083 DW-Peas

Portfolios:

Innovation Market: 542,486 DW-Peas

net worth: 618,569 DW-Peas

Active Timed Events

Idea Street Tips

Buy and sell shares in the ideas currently trading on the **Idea Market**.

Invite your colleagues to Idea Street and earn 5,000 DW-Peas per referral.

Complete your profile details so people know what your job role is and are aware of the skills you could bring to an idea team.

Save Idea Street as a 'favourite / bookmark' so you can access it in the future

Wrap up

- Serious Games
 - Videogames that have a goal beyond entertainment
 - Games for Health
- Gamification
 - The use of game elements in non-game contexts
 - Designing the player journey, fun and motivation

Questions?