

Interactive psychological analysis methods within a web-based intervention for wellbeing management

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Business from technology

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Background

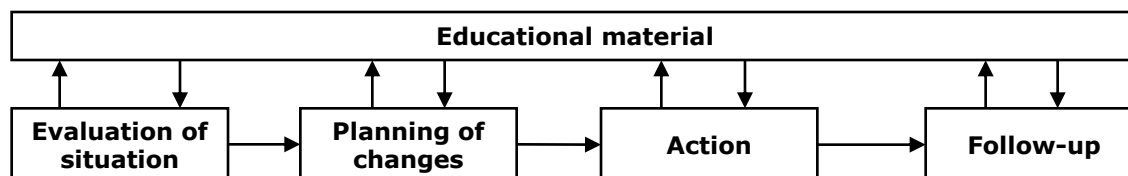
- Mental health issues caused by stress and work overload are increasingly common
 - Lead to chronic health problems and loss of productivity
 - People need to learn methods to cope with stress
- Lack of resources in healthcare
 - Need for novel treatment solutions such as web-based interventions
- P4Well = Pervasive and personal psychophysiological wellbeing and recovery management concept

P4Well service concept

- Web-based intervention and personal health technologies (mobile applications and wearable devices)
- Short face-to-face intervention consisting of three group meetings
- Homework between the meetings
- Role of the portal: in-depth analysis and assessment of life situation, problems and required changes
- Role of devices: self-monitoring, support in tracking goals

Web-based intervention

- Based on cognitive-behavioral therapy (CBT), acceptance and commitment therapy (ACT) and interpersonal therapy (IP)
- Modules on different themes of wellbeing: stress, sleep, exercise, good life, relationships
- Modules divided into phases loosely based on Transtheoretical model
- Relevant analysis tools within each phase
- Educational material available throughout the modules



Examples of intervention methods

- Analysis of values
 - Method of acceptance and commitment therapy
 - Identification and assessment of personal values helps in planning required behavior changes
 - Can be done in the form of a mind map
- Social atom
 - Method of interpersonal therapy
 - Social atom represents human and her connections to important people and other objects
 - Traditionally done by drawing circles, triangles and boxes with lines connecting them

Analysis of values: Web implementation (1/3)

The screenshot shows the 'Hyväksi' web application interface. On the left, there is a sidebar with navigation links: Sisältö, Arvoanalyysi, Omat työkalut, and Kirjautuminen. The main content area is titled 'Arvoanalyysi' and contains a form for entering analysis data. Below the form, there is a 'Value analysis' window with a 'Save' button and a 'Continue >' button. The 'Analysis' window shows a central 'Good life' box connected to several surrounding boxes: Close friends, Regular income, Good health, I enjoy my job, Safe neighbourhood, Normal weight, and Taking care of myself. A legend indicates that orange circles represent 'Define extra information!' and green circles represent 'Extra information saved'.

Filling the analysis

The screenshot shows the 'Value analysis' window with the 'Instructions' tab selected. A modal window titled 'Good health' is open, asking the user to 'Assess the value in more detail:'. It contains two sliders: 'How important is this to you?' and 'How well have you succeeded in this during the past month?'. The 'Good health' box is highlighted in green, indicating that extra information has been saved. The modal window also includes 'Save' and 'Cancel' buttons.

Assessment of a value

Analysis of values: Web implementation (2/3)

Ordering of values

< Previous Save Analyze >

Put the values in the order of importance.

Think about your current situation in life: which of the values do you consider to be most important **right now**?

You can change the order of the values by dragging and dropping.

Number	Value
1	Close friends
2	Good health
3	I enjoy my job
4	Taking care of myself
5	Regular income
6	Normal weight
7	Safe neighbourhood

Ordering of values

Feedback view

Feedback from value analysis

< Edit Save

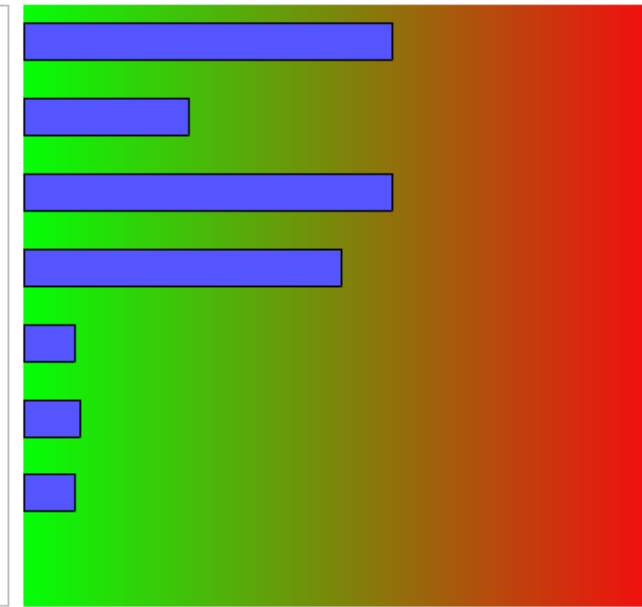
Targets for change

Fourfold table

List view

Instructions

- ☒ Close friends
- ☐ Good health
- ☐ I enjoy my job
- ☐ Taking care of myself
- ☐ Regular income
- ☐ Normal weight
- ☐ Safe neighbourhood



Set goals

Analysis of values: Web implementation (3/3)

Feedback from value analysis

< Edit

Save

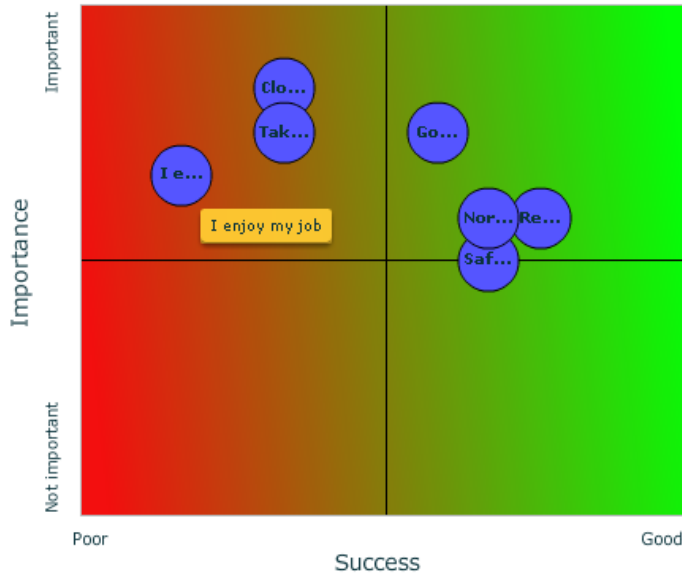
Targets for change

Fourfold table

List view

Instructions

Good life



Feedback from value analysis

< Edit

Save

Targets for change

Fourfold table

List view

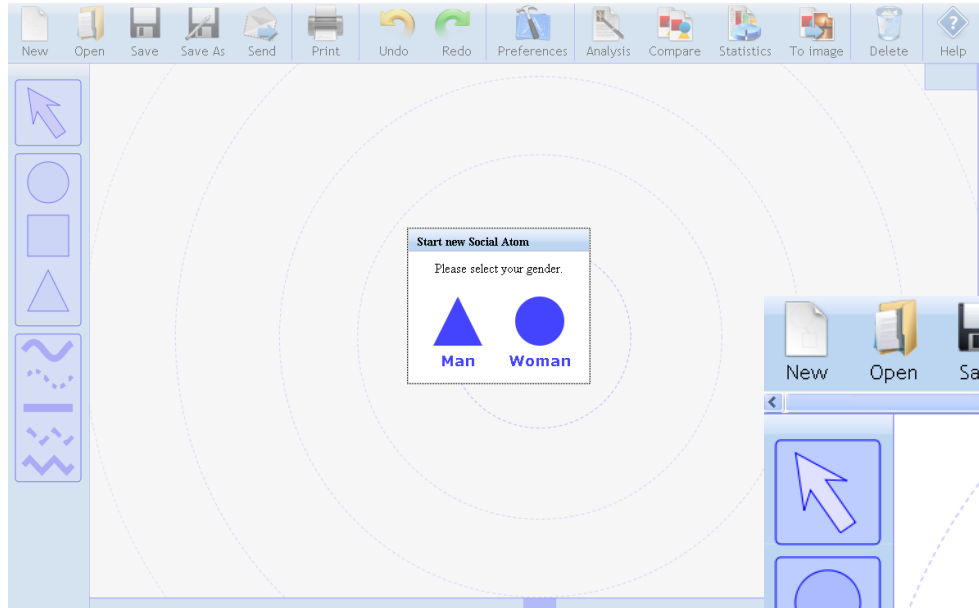
Instructions

You can order the list of values according to each attribute by clicking the column titles.

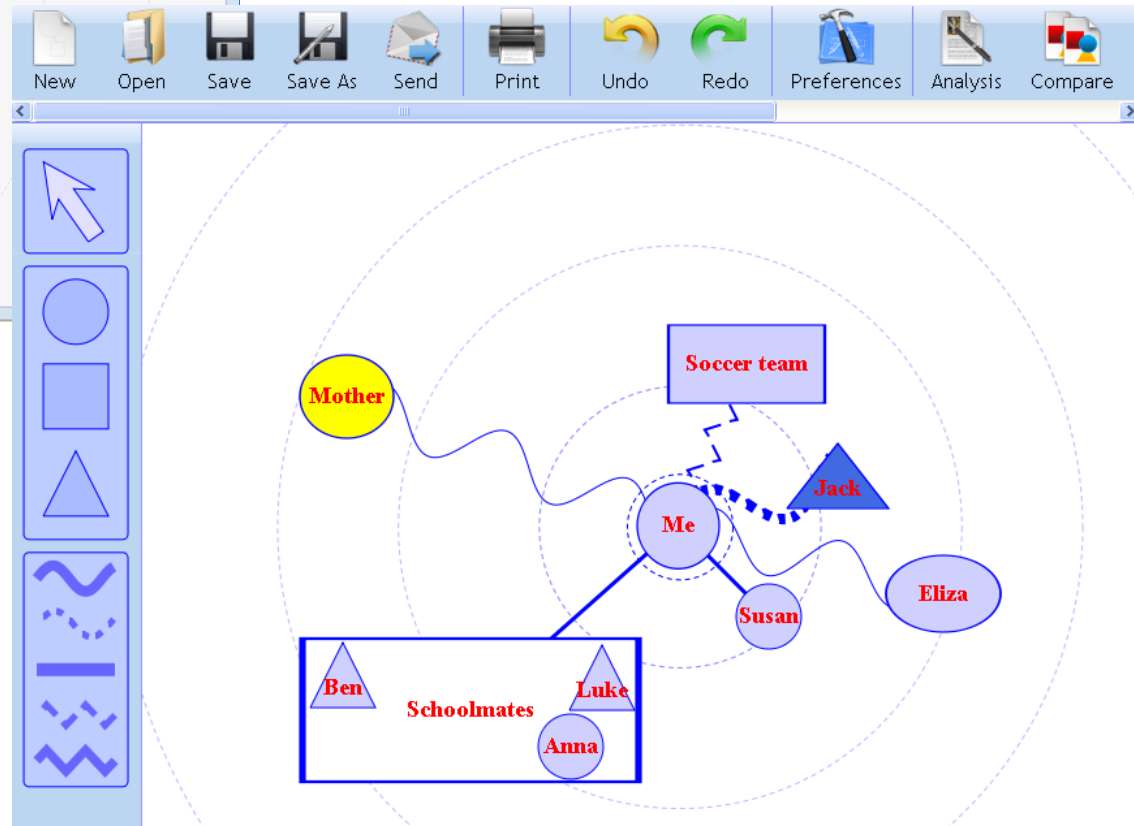
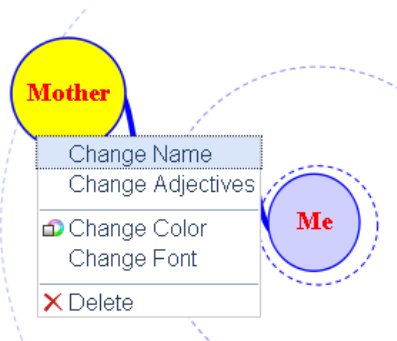
Value	Importance	Success ▲	Order
I enjoy my job	7	1	3
Taking care of myself	8	3	4
Close friends	9	3	1
Good health	8	6	2
Safe neighbourhood	5	7	7
Normal weight	6	7	6
Regular income	6	8	5

Feedback views

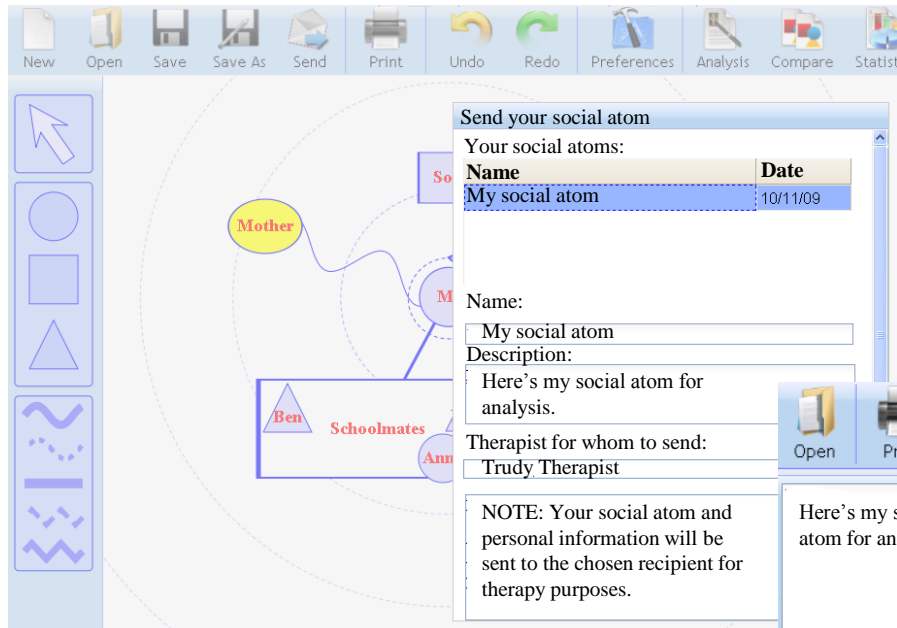
Social atom: Web implementation (1/2)



Drawing one's social atom

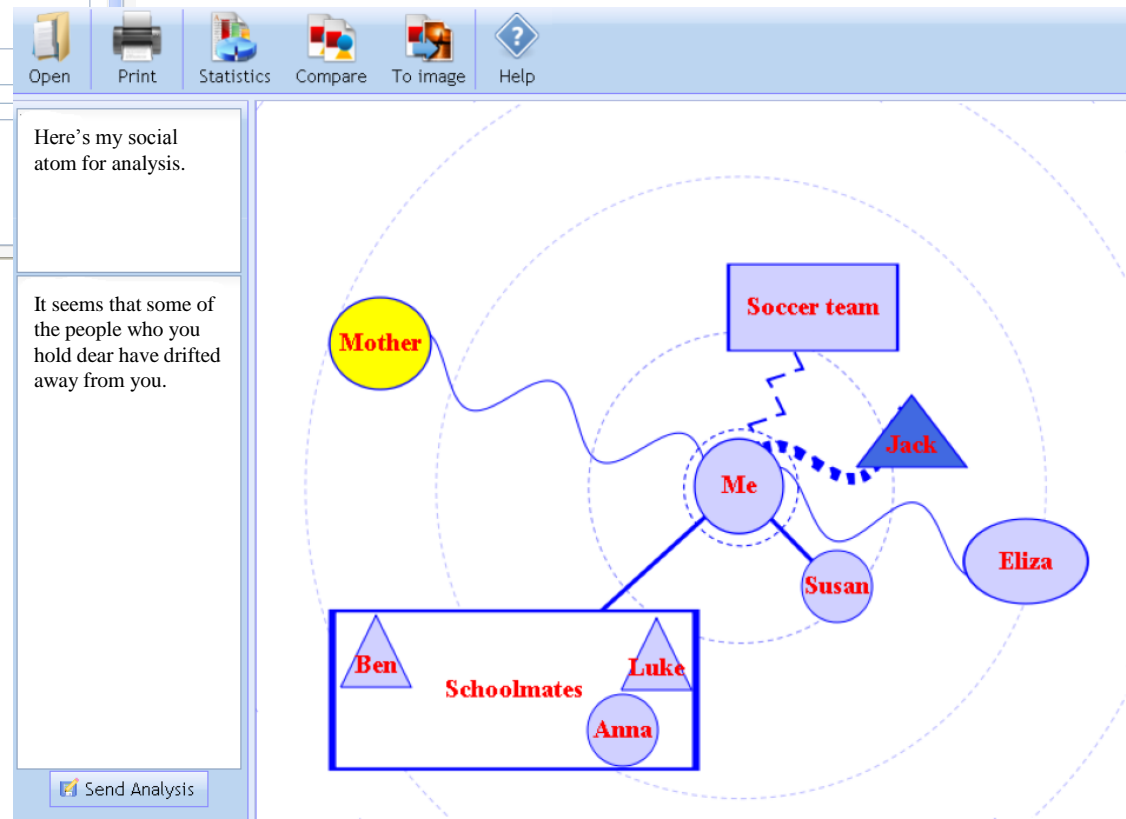


Social atom: Web implementation (2/2)



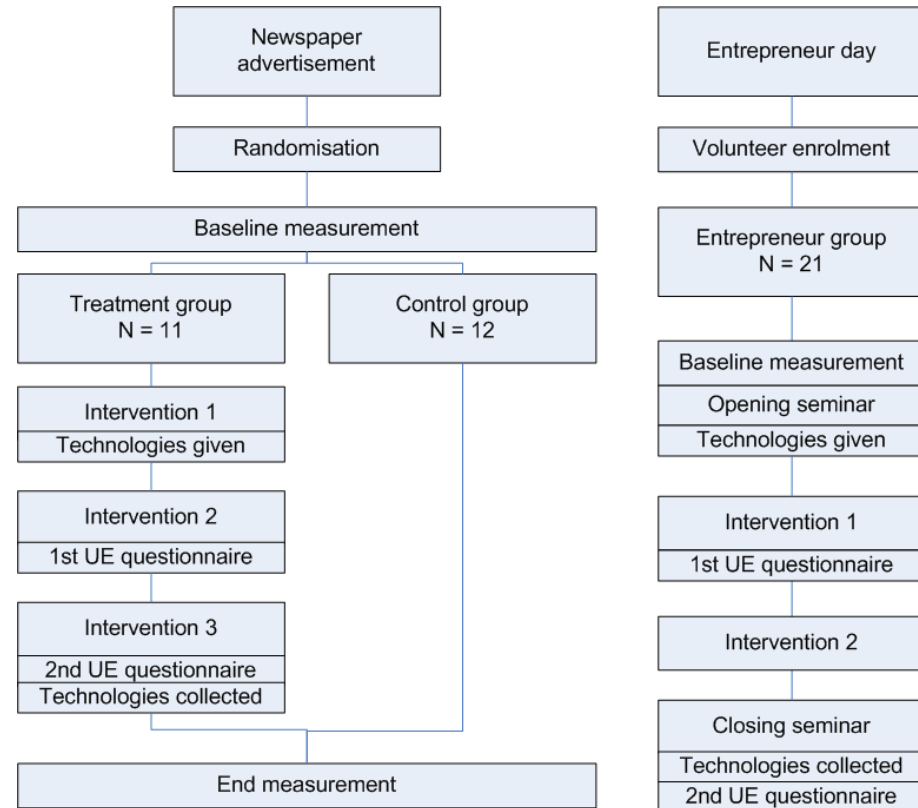
*Sending the atom
to be analyzed*

Professional user view



Evaluations

- Service concept evaluated with two user groups in spring 2009
 - 11 men aged 48 ± 4.8 years (sleep problems or depression symptoms)
 - 21 entrepreneurs aged 54 ± 5.7 (stress or lack of recovery)
 - Study period of 9-10 weeks
- Portal usage log collected and analyzed
- Small-scale expert evaluations for web-based intervention methods during summer 2009
 - Test accounts for the portal to 8 rehabilitation experts: feedback from 5
 - One interview and testing session with a psychologist



Results: User evaluations

- Average total time spent in the portal during 10 study weeks
 - Male group 63 minutes
 - Entrepreneurs 51 minutes
- Portal tools were considered interesting, but many said they lacked time to get familiar with them
- The two methods were not used much

	Male group (n=11)		Entrepreneurs (n=21)	
	Visited	Saved	Visited	Saved
Analysis of values	6	1	8	3
Social atom	6	0	12	3

Results: Expert evaluations

- Positive towards the idea of web-based analysis methods
 - Makes remote consultation possible
 - Analyses are modifiable and comparable
 - Visualization of results and feedback
- However, commented that more complex analyses are hard to do even with therapist help
 - Saw little utility for people not familiar with the methods
- Analysis of values easier to understand than social atom
- Emphasized the need for more instructions and guidance

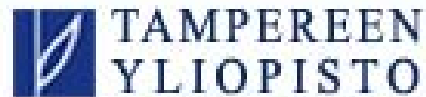
Conclusions

- In-depth analysis of life situation is important in recognition of personal goals and planning of lifestyle changes
- Analysis methods can be hard to understand in independent use
 - Need to provide interactive examples of diverse use scenarios
- The methods presented here may be more suitable for therapist-aided interventions than for pure self-help
- Stressed people need quick-to-use, intuitive tools
 - Intervention structure was somewhat complex and text-driven
 - Personal devices and mobile applications were used more frequently, since they were always at hand
 - Challenge: how to motivate people to use sufficient amount of time and thought in doing the analyses?

Future work

- Improvements in methods were made based on evaluation experiences
- Ongoing evaluation with 22 women (+23 control)
- Web intervention should be evaluated separately to control the effect of other technologies
- Further research needed
 - Recognition of motivational and persuasive factors
 - Automated interpretation of complex analyses and presentation of results

Project partners



VTT creates business from technology



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