Culstering of anonymized users in an enterprise intranet social network

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Outline

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   - Conclusions
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ERP

ERP Enterprise Resource Planing is a package of software with multiple functions that allow a company perform all bureaucratic and management tasks.

The ERP's are increasingly complex because:

1. Handle many data.
2. Have a lot of programas and multiple options.
3. Interact with many processes.
4. There is not a unique way to perform the tasks.

Introduction

The users perform tasks based on:

- Their training.
- Their own personal experience.
- Guided by other users.

This patters are not always correct, and is very difficult to fix this.

- The training is expensive.
- Oldest employees do not want to change.
- The education level of employees determines them to acquire new skills.

Introduction

- Grupo I68 has developed a recomendation system to guide the employees through daily work. Performing groups of employees with similar tasks.
- Add the user skill.
- How? using user proficiency.
- But it is very difficult to identify an skilled user.

$$\textit{Extensive experience} \neq \textit{skill}$$

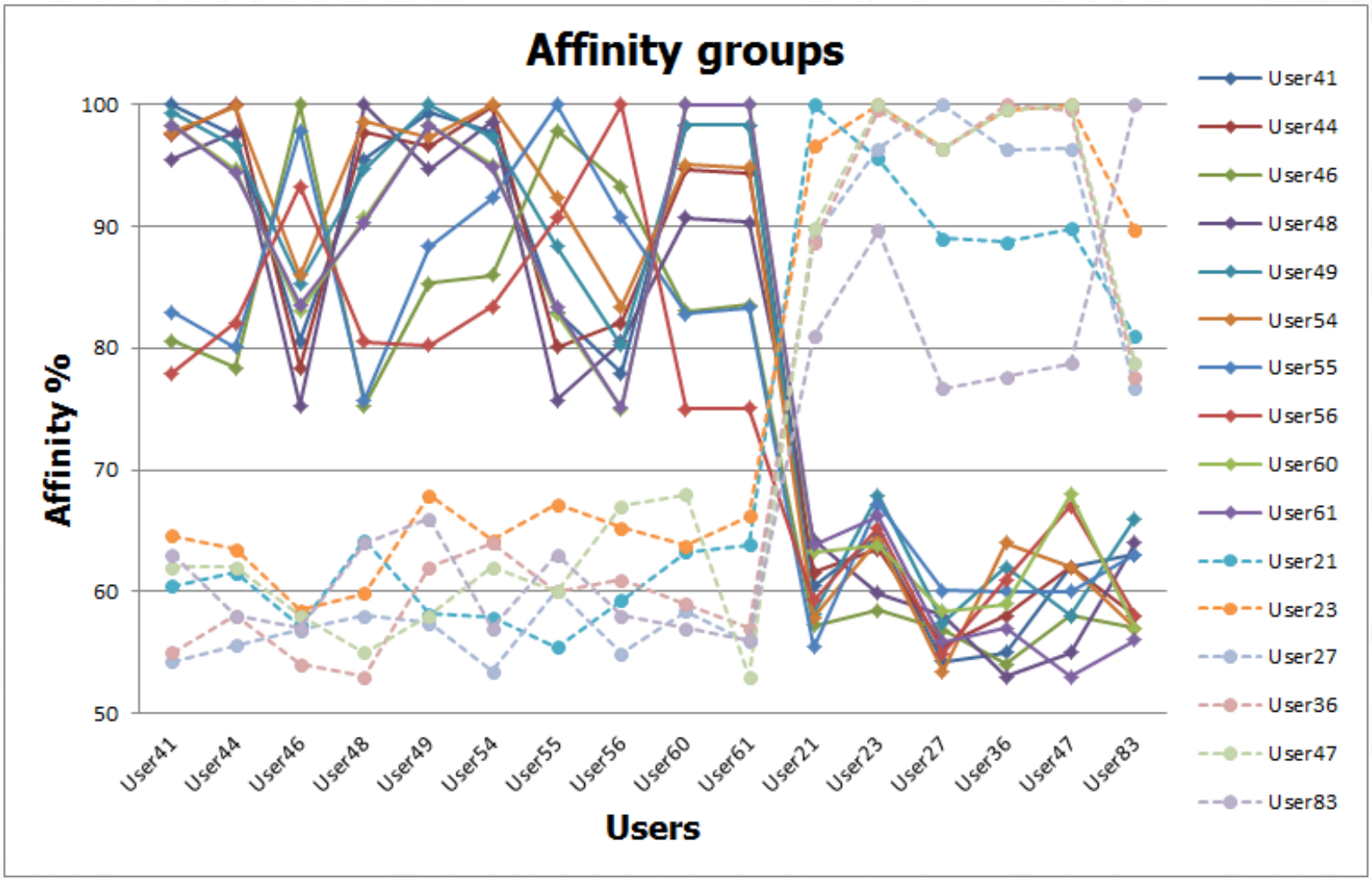
- Experienced employees think that their way of performing task is the best. Anonimizing employees avoid these employees will resist changes.
- An skilled employee is identify in each group and guide the others others toward a more efficiente work.

User Clustering

- It should identify the characteristics that define the work of each employee.
- It calculates the Euclidean distance between the features used to generate an affinity graph.
- Using a threshold U, we created groups of employees.

$$A = \sum_{1}^{n} \parallel fa_i - fb_i \parallel, (A > U) \Rightarrow e(a, b) = 1$$

Affinity Groups

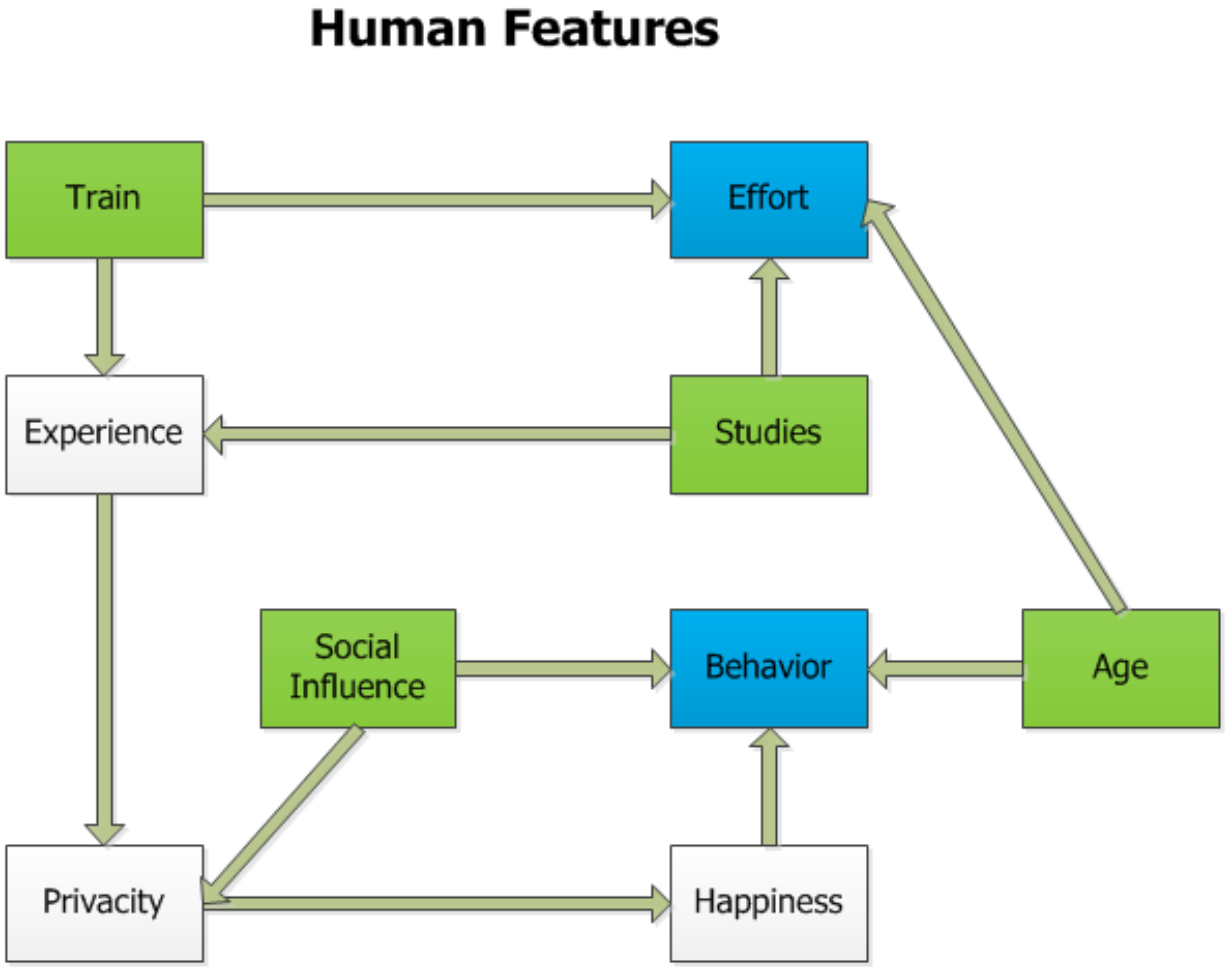


Anonymous User Groups

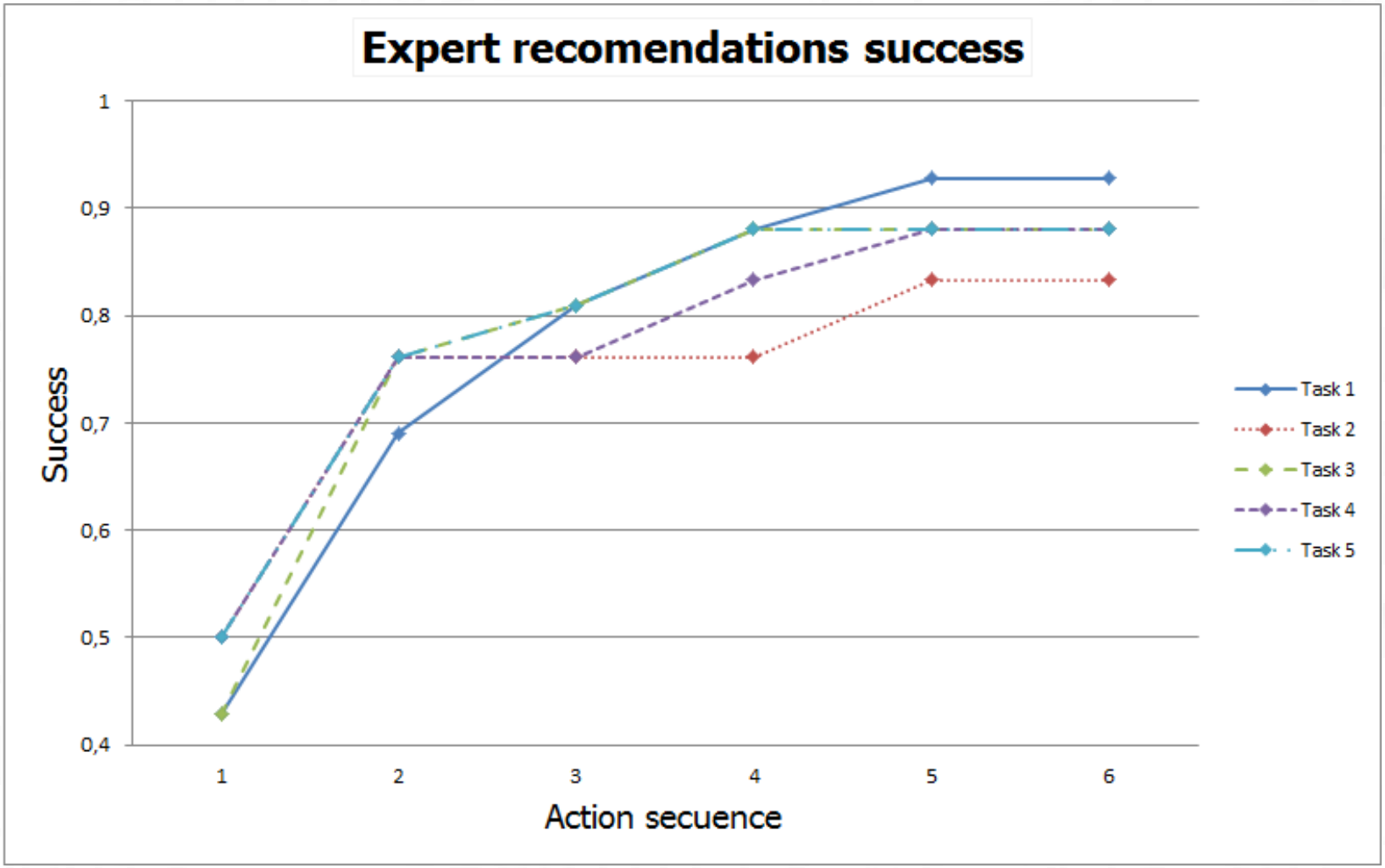
How to identify the best performing user?

- User with higher average affinity with the members of his group.
  - This user can be related to others by bad practices.
- An human expert can identify the best performing user of each group.
  - This is slow, human dependent and biased by the expert.
- Some human features and their relationship is the best way to identify the best performing user.

Human features



Experimental Results



Conclusions.

- We have created gorups of users using ERP logs.
- Human experts have given the nod to these groups.
- The anonymizing of user has allowed a better user experience.
- A human expert is still necessary to identify the best skilled user, but we have some indicators that suggest who might be this person.

Future work

- Identify automously the more skilled user, and use his experience to guide the members of his group.
- Install the system into a real enviroment to improve the system.

Questions

Thanks for your attention