



# 95.20 Métodos y Modelos en Ingeniería de Software I

## Capítulo 12: Peopleware

Julio 2020



# Propósito



Presentar un **panorama general** del peopleware.



**Peopleware:** motivación, productividad, dinámica de grupos, trabajo en equipo, comportamiento organizacional, psicología de la programación, interacción hombre máquina, etc,

# Caso #1

“[...] Then, a prototype of the system was presented publicly at the college. The meeting was meant to encourage decision making regarding the fate of the project and whether it should be continued or not. During the presentation, it became completely clear that a large group of professors were totally against the project and wanted it cancelled [...]. This group, however, did not have enough of an argument against the system. [...] Of course the professors had more than enough (secret) reasons to wish for the cancellation of the project. Those reasons, however, could not be brought into discussion — the reasons had to do with the sideline consulting business. [...]”

## Caso #2

“They have committed to a **schedule** that may well be **impossible to achieve** (Lie #1). [...] **workers**, afraid to say “no” to management, **agree to the commitment** (Lie #2). [...] The **manager asks** one of his staff specialists **to explore the use of the breakthrough technology** by using it on this project, and the **specialist, convinced** that the **breakthrough cannot possibly accomplish** what it promises, **agrees to try** (Lie #3).

Time passes, and the project does **indeed fail** to meet its schedule. [...] the project lead **continues** to tell management that **the schedule will be met** (Lie #4). When it becomes obvious that it cannot be met [...], **the entire project team expresses surprise** (Lie #5) and says it **will try harder** as the project continues (Lie #6) [...]”

## Caso #2 (cont.)

“[...] Finally, the project staggers to a halt, having completed most of the desired functionality, albeit several months later than the original schedule. The project lead gives the project manager, and the project manager gives his boss, an essentially phony reason for their inability to meet schedule (Lies #7 and #8). No one on the project tells anyone[...] that the problem was that the original schedule never was achievable and that they have done the best they could under impossible circumstances, which means that the same problem will occur on future such projects (Lie #9, a communal lie). Management spreads the word that the software project team was the problem, and notes that they shouldn't have been surprised, because this kind of thing happens all the time on software projects (Lie #10, the most damaging lie of all). ”



## Caso #3

“A big organization and a small consulting company formed a consortium to develop a new software product. The partners agreed that they would equally share the efforts and benefit from the results together. For the small company the project was considered huge [...] For the big organization, however, the effort was somewhere between a small and medium project [...]

The project failed for technical reasons. [...] There was even suspicion that the big company had damaged the project deliberately [...] The quarterly incomes of the big company were only slightly lower than expected. [...] the small company was almost ruined. The small company had to be sold. And —surprise, surprise— the big company became the new owner of the small company.”

## Caso #4

“According to a 2007 FBI report, Lee Chen was terminated by his Illinois - based company in 2007. Not too long thereafter, he began accessing that company’s data without authorization. He “downloaded thousands of computer files, deleted customer files, changed the prices on invoices bound for customers, and tampered in other ways with the company’s computer files.” (During the time he was doing that, according to the FBI report, the company’s network operated “significantly slower.”) Chen acknowledged in his guilty plea agreement that the company was forced to spend over \$10,000 to restore the integrity of its computer system. Chen’s sentencing was scheduled to happen in early 2008. We are not aware of what his sentence was, but the maximum sentence for his activities would be a 12 - month imprisonment term and a fine of up to \$100,000. ”



# El lado oscuro del desarrollo de software



- Comportamiento subversivo
- Mentiras
- Hackeo
- Robo de información
- Espionaje
- Sabotaje

# Emociones

## Las seis básicas



- Ira
- Miedo
- Asco
- Sorpresa
- Felicidad
- Tristeza

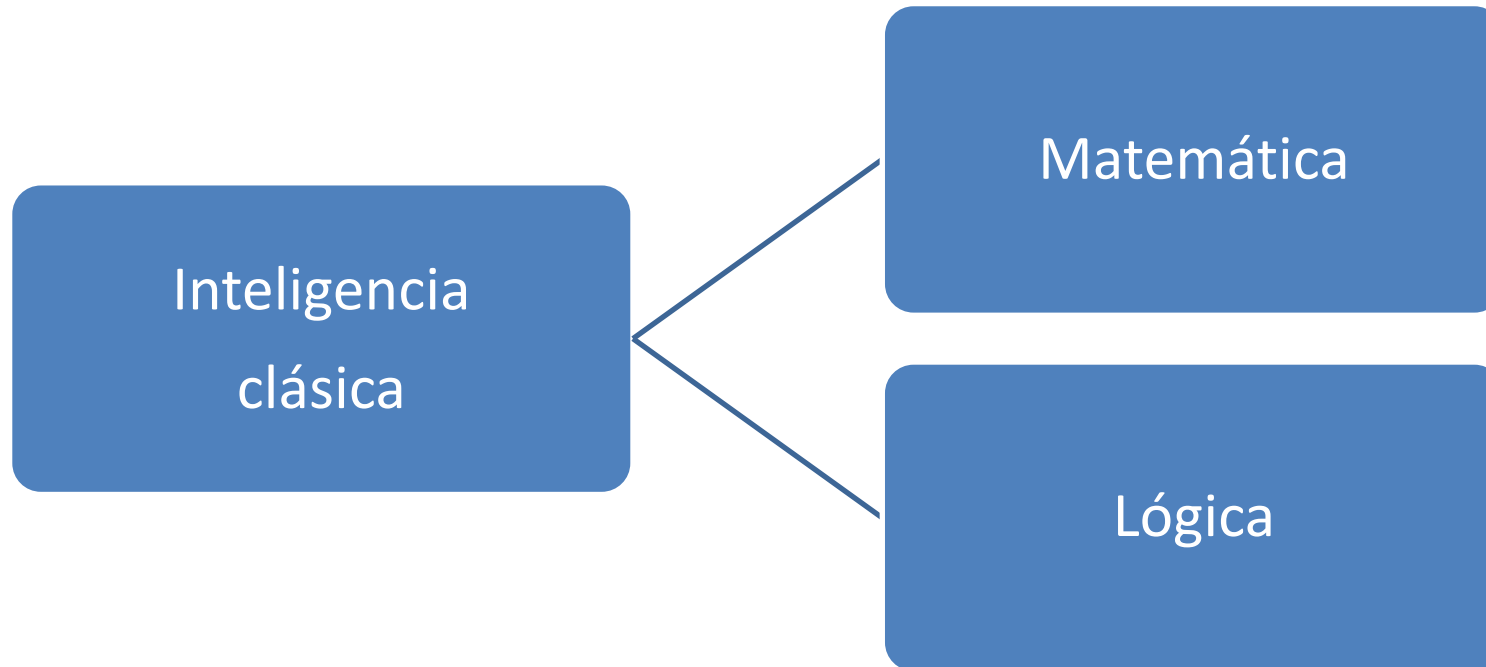
# Emociones

Fundamentales para la supervivencia de la especie humana

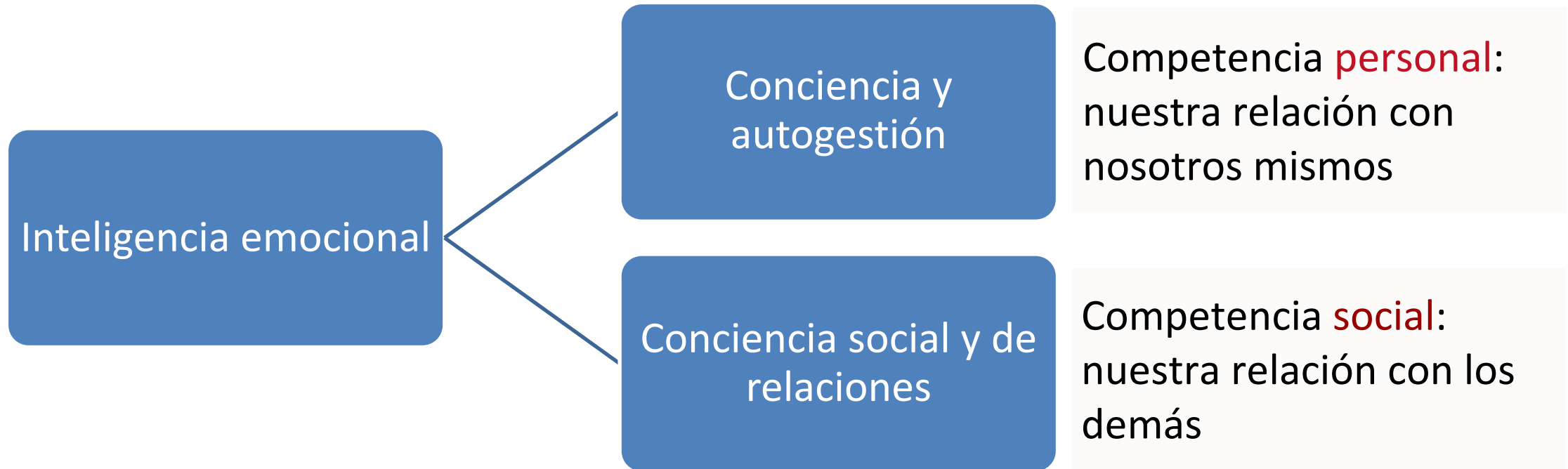


Vivimos en **realidades sociales complejas** con un cerebro estructurado para la **supervivencia física**.

# Inteligencia

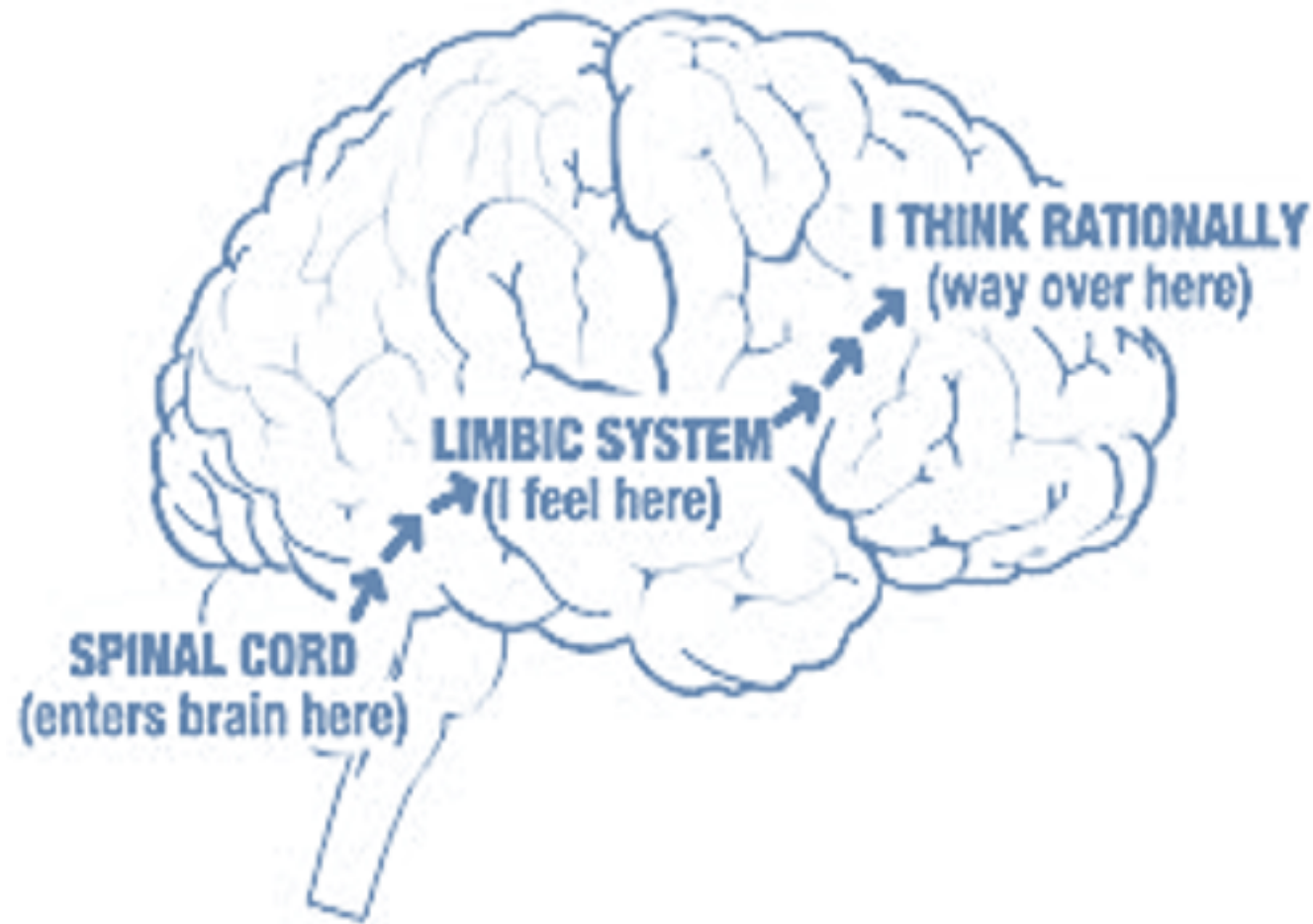


# Inteligencia



# Cerebro límbico y cerebro pensante

Emociones e intelecto





# Sistema 1 y sistema 2

## Intuición y pensamiento racional



$$17 \times 24$$

# Sistema 1 y sistema 2

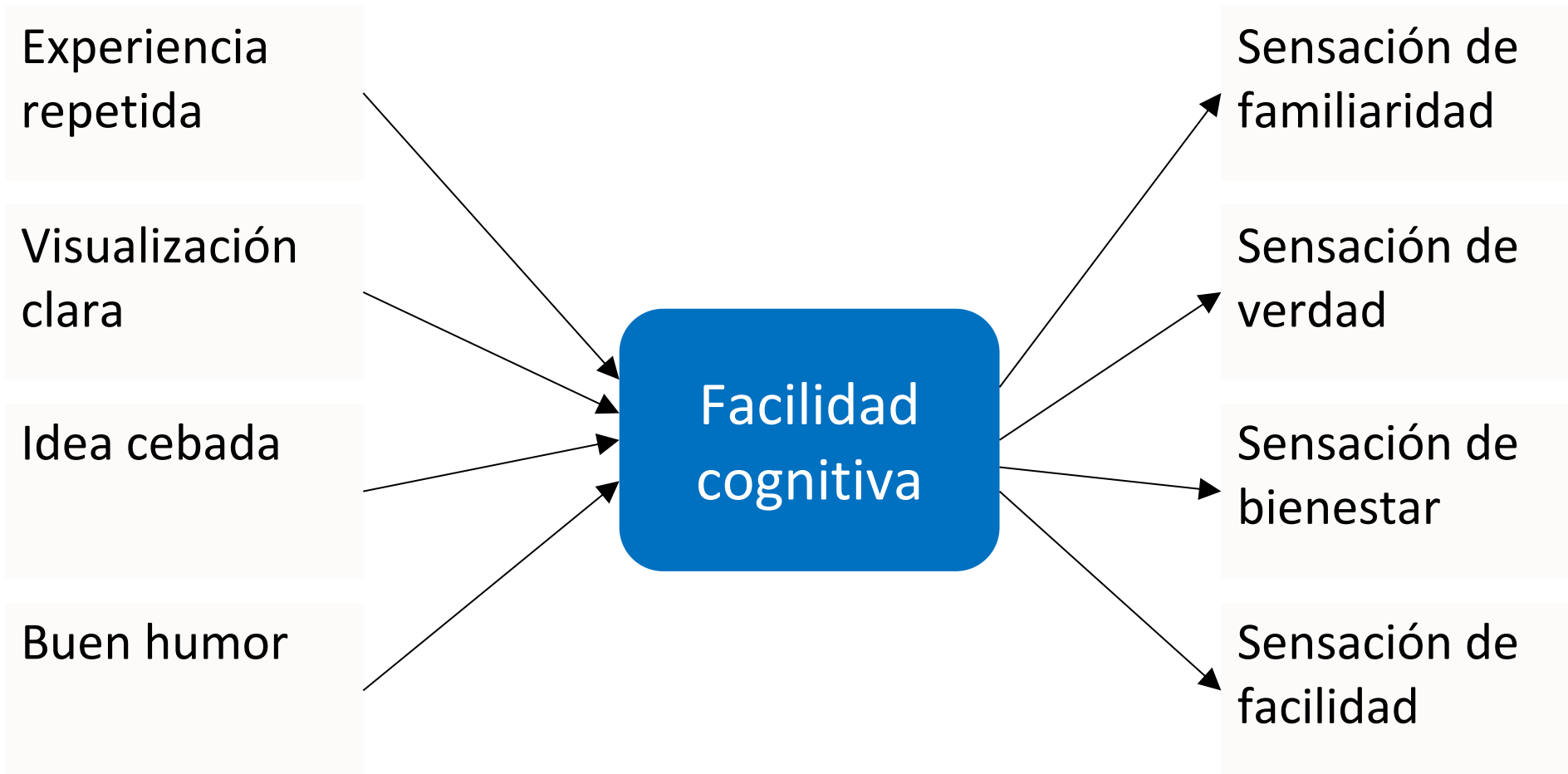
Un bate y una pelota cuestan \$1,10.  
El bate cuesta \$1 más que la pelota.  
¿Cuánto cuesta la pelota?

$\$0,05 + \$1,05 = \$1,10$

**Adolf Hitler nació en 1892**

Adolf Hitler nació en 1887

Ambas son falsas. Nació en 1889



# Facilidad cognitiva

Recordamos mejor

- Eventos poco frecuentes.
- Mensajes fácilmente legibles (tipografía, color) y con un lenguaje sencillo.
- Afirmaciones (verdaderas o falsas) que se repiten.
- Cuando estamos de buen humor.

# Sesgos cognitivos

## Falacia de la planificación

- Es muy difícil estimar algo en un mundo cambiante.

## Aversión al riesgo

- Le damos el doble de peso a las pérdidas que a las ganancias.

## Cambios

- Si nos sentimos amenazados, defendemos nuestro territorio.
- Si los cambios están bien pensados, en general hay muchos ganadores y pocos perdedores...
- Salvo que la parte afectada tenga más influencia política.

## Estado anímico en el trabajo

- Depende menos de factores generales, como beneficios y estatus.
- Son más importantes los aspectos situacionales:
  - Oportunidades de socializar con los compañeros
  - Bajo ruido ambiental
  - Presión del tiempo
  - La presencia del jefe (peor que estar solo)

# Cambios



- Nuevos sistemas, cambios al entorno:
  - Estrés.
  - Incertidumbre.
  - Balance de poder.
  - Comunicación informal.
  - Pérdida de significado.



# Cambios

Resistencia, tensión, involucramiento



- Cambiar consume más recursos de nuestro cerebro.
- La tensión creada por el cambio cede cuando estamos involucrados.
- Hay que encontrar la manera de involucrar a los interesados

# Mal manejo de cambios

- Usuarios temerosos de que el proyecto afecte (o elimine) su trabajo.
- Interesados temerosos del control adicional que el proyecto implica.
- Miembros del equipo descontentos con el gerente de proyecto y con esperanzas de tomar el control.
- Individuos o grupos afectados por la posible pérdida de poder.
- Individuos o grupos que colaboran con el proyecto compiten en otras áreas.

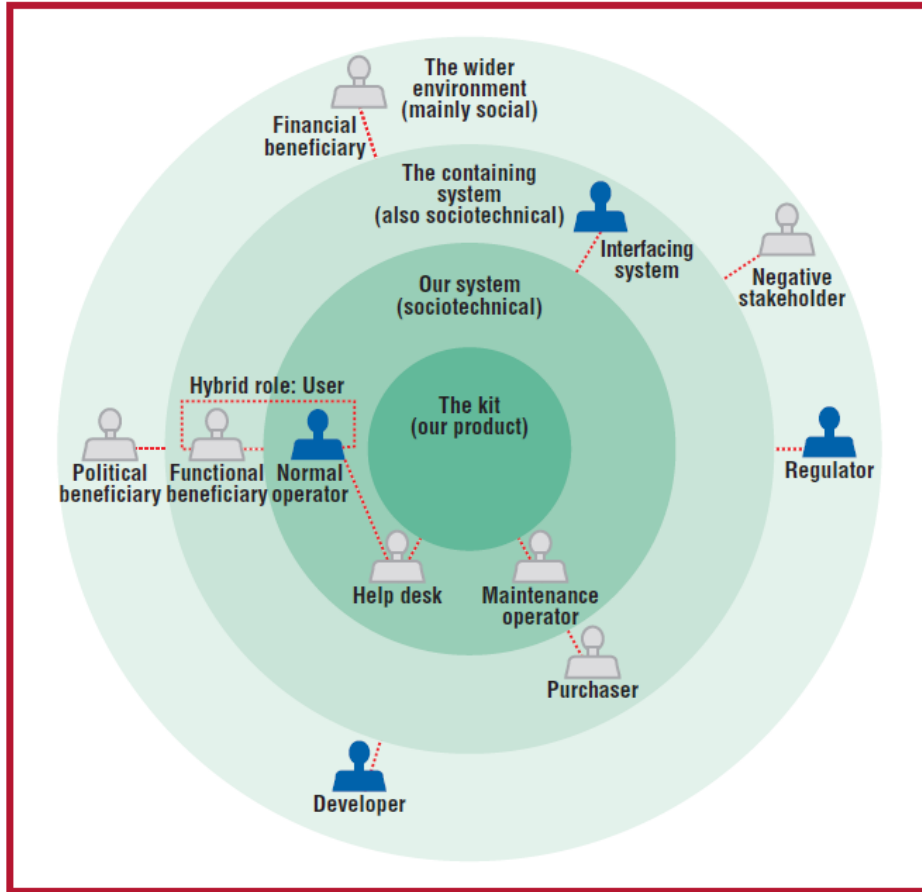
# Comportamiento subversivo

## Patrones

- Rivales y enemigos del líder de proyecto.
- Interesados subversivos dentro del proyecto.
- Clientes y usuarios.
- Interesados subversivos fuera del proyecto.
- Promotores de otros proyectos.
- Gerentes subversivos.
- Compañías asociadas desleales.
- Otros.

# Roles e interesados

## La importancia de identificarlos



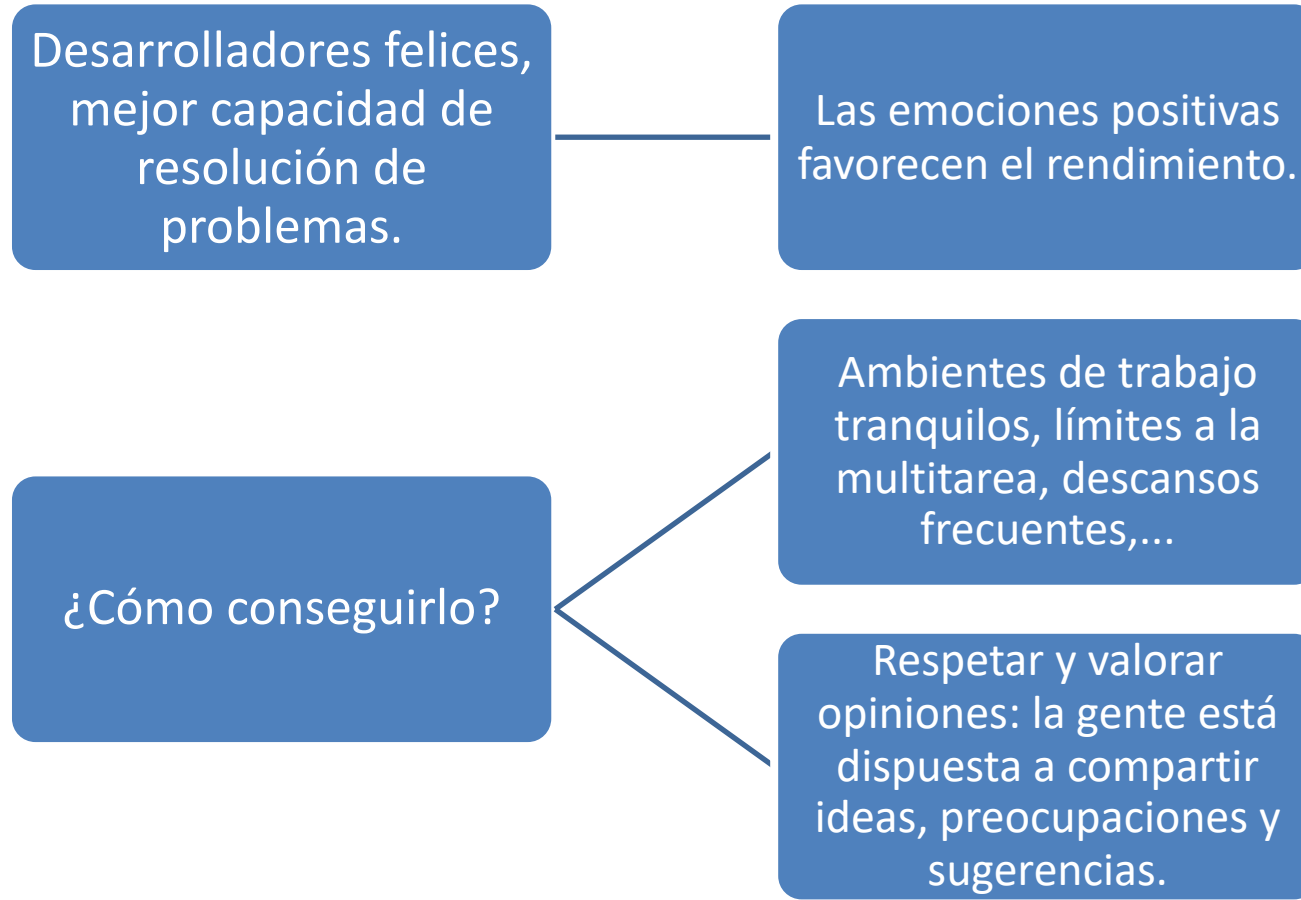
# Conclusiones

## Gestión de cambios y expectativas



# Conclusiones

## Desempeño y productividad





## Caso #5

“I’ve never **worked so hard**, put in more hours, got more stuff done, cranked out more code, etc., as I have in my [Company Name] time. Why? In meetings, **my ideas were listened to**. I had a ton of **freedom in my job** to Get Things Done. I was **recognized** for Stuff I Got Done. I was **not bogged down** in daily staff meetings, weekly department meetings, etc. I had input on who to hire for my team. Most of all, I Had a Door I Could Close (but never did). **Treat your employees like intelligent people**, give them the tools they need, get out of the way, and they will not only be happy but productive as [censored].”

