

Smart Indicators and Learner Monitoring

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Smart Indicators and Learner Monitoring

22.06.2007, Barcelona
Christian Glahn,

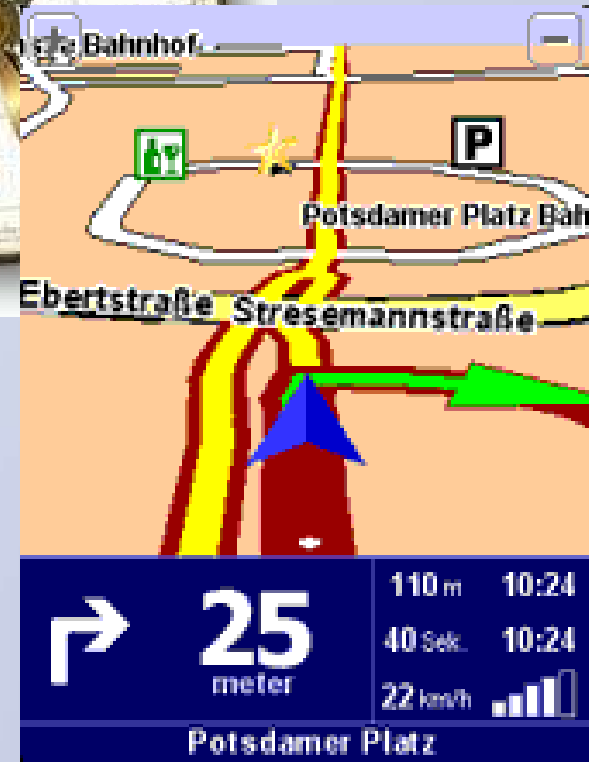
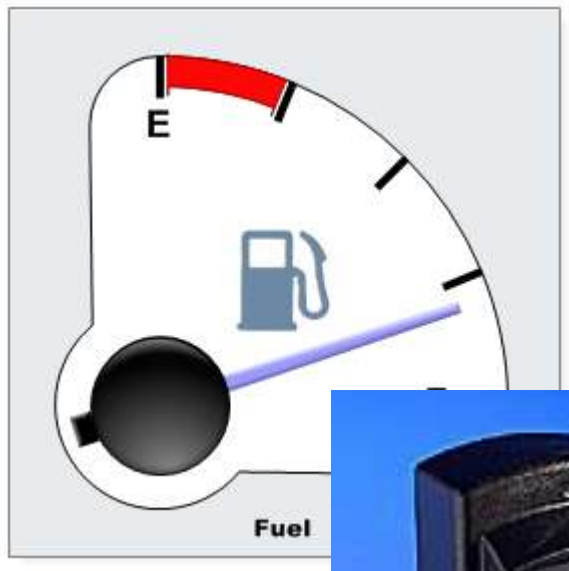
Marcus Specht, & Rob Koper
Open University of the Netherlands



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Indicators



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Indicators

Indicator systems are systems that inform users on a status, on past activities or events that have occurred in a context

Indicator systems help users to orientate, organize or navigate in that context without recommending specific actions



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How is this related to learning?



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Learners need support
during their learning process



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What kind of support
do learners need?

Instruction

Feedback and Guidance

Reflection and Awareness



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... of course this is not new to
the domain of
educational technology
systems for automated learner support
have been investigated for years



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A system that supports
learning has to be smart

... but not necessarily intelligent



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Learning changes throughout life

... and thus the learner support
has to change, too!

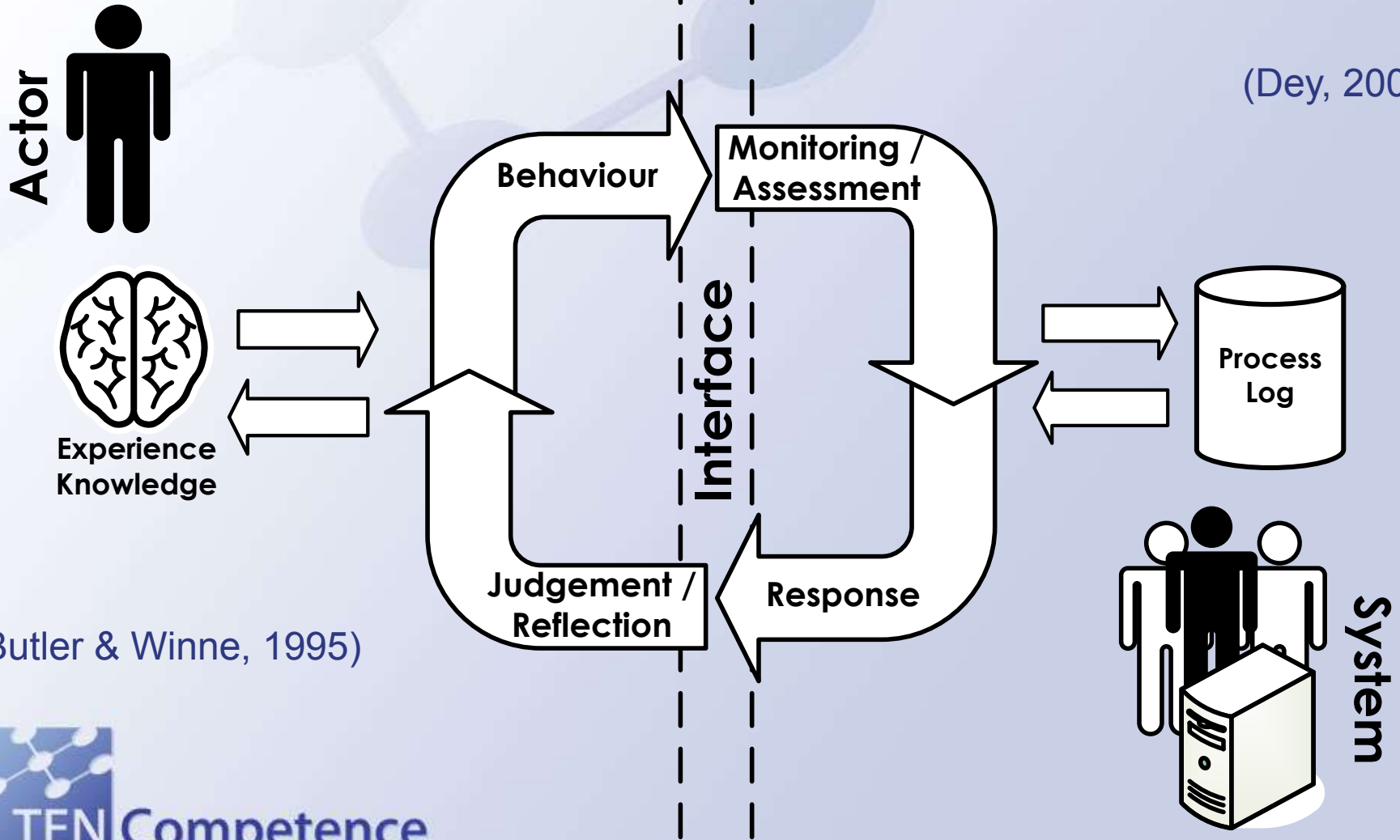


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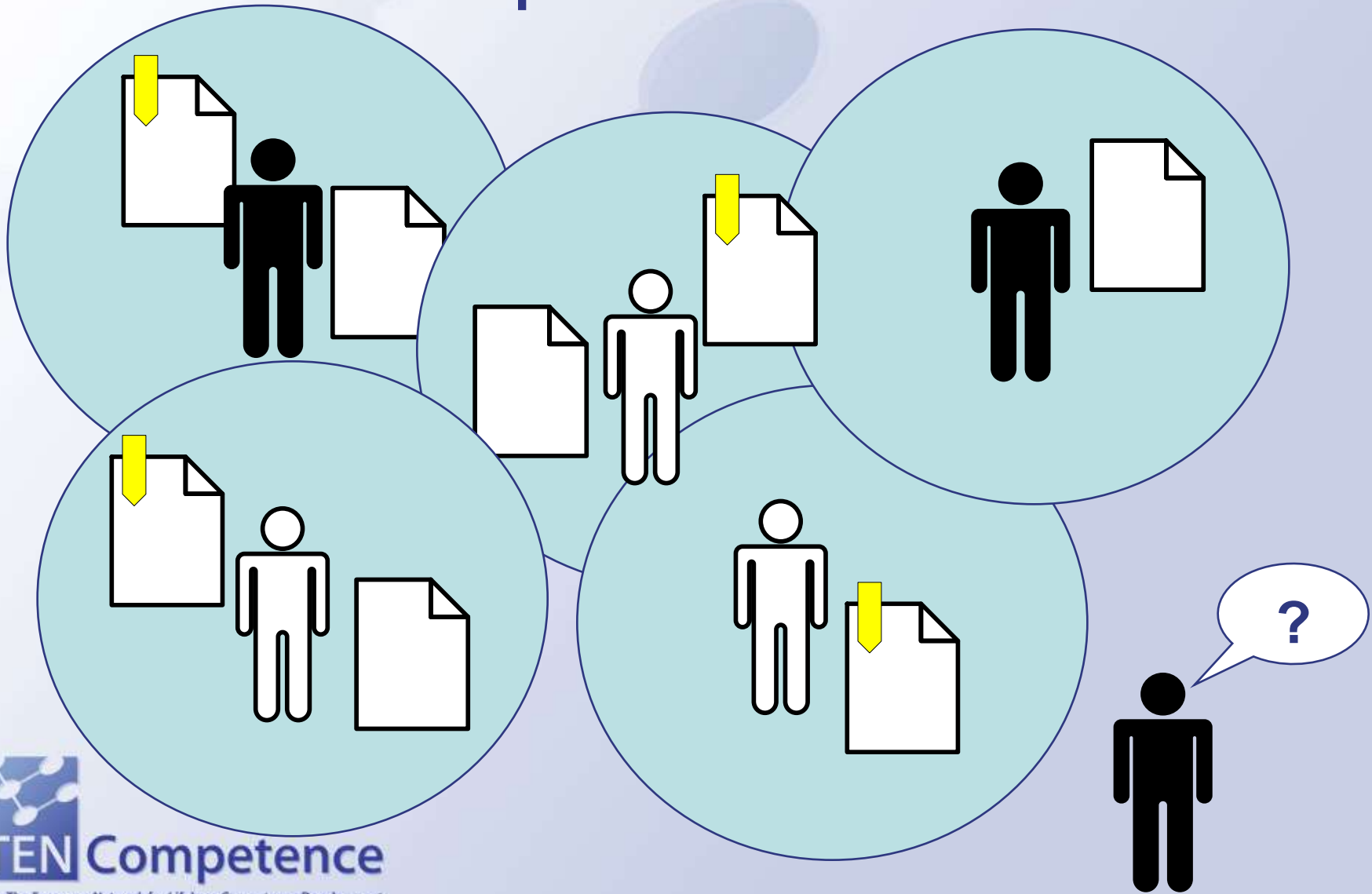
Meta-Model for Smart Indicators

(Dey, 2000)



(Butler & Winne, 1995)

Example Scenario




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Smart Adaptation

Engage

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▼ tags ComputerGames ComputerHistory
ComputerScience Demos Design Flash
FutureTechnologies GameBasedLearning Gaming
GraphicDesign GUI HCI Journals JSON
LearningTechnology Literature LSA Mace MMURPG
MobileLearning OpenSource SOAP SocialSoftware
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XUL

Motivate

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MobileLearning OpenSource SOAP
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WebAnimation WebApplications Web
XUL

Reflect


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▼ tags ComputerGames **ComputerHistory**
ComputerScience Demos Design Flash **Flow**
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GraphicDesign GUI HCI Journals JSON
LearningTechnology Literature LSA Mace
MMURPG MobileLearning OpenSource **Perl**
SOAP SocialSoftware
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Visualisation Web WebAnimation
WebApplications WebDesign XML XUL



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Learner actions can be performed
inside and outside of
the learning environment



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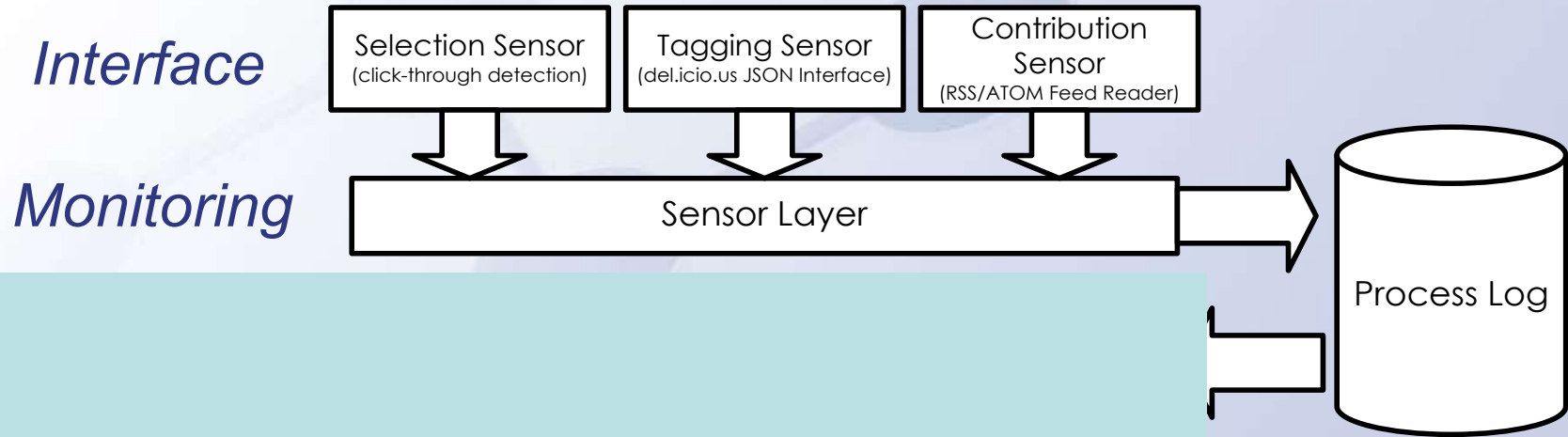
... but an environment can be aware of external actions



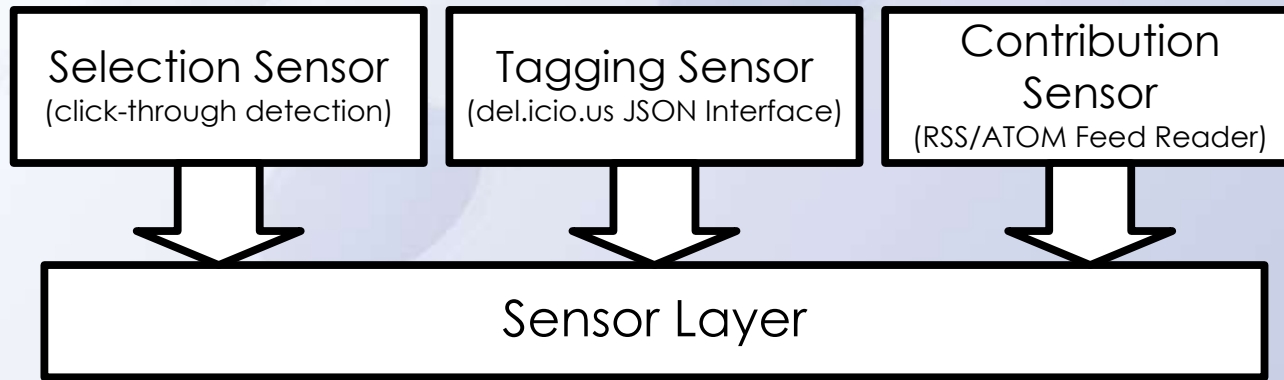
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An Architecture for Smart Indicators



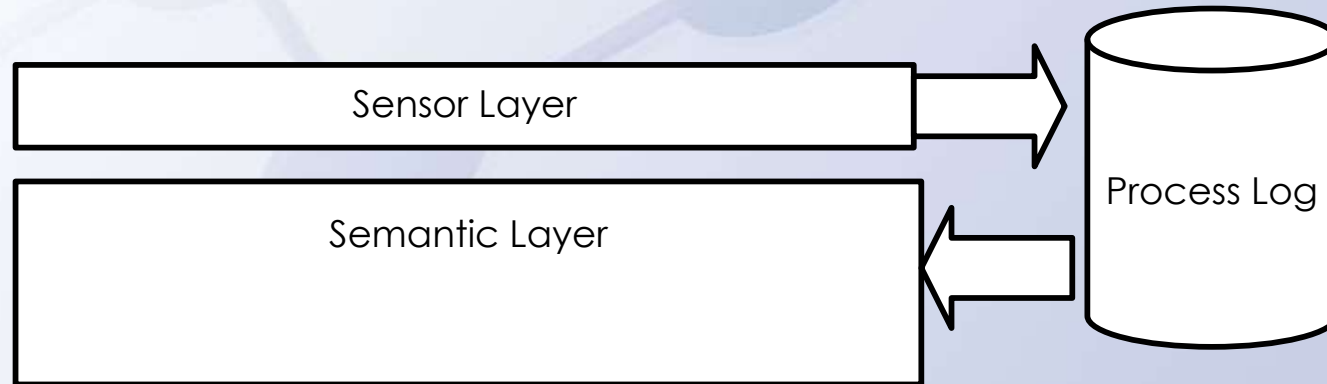
Learner Monitoring using Sensors



- Sensors monitor learning actions and learning context
- Sensors provide data immediately or delayed
- Sensors provide data of different granularity
- The sensor layer has to homogenise and group the incoming data



Learner History in a Process Log



- IMS LIP activity semantics are the foundation for the data structure of a process log
- Context emerges by utilising anonymous learner information
- The sensor layer has to assure complete data sets for each activity reported by a sensor



Conclusions

- Presentation of learner information depends on the context of the learning process
- Learner support must not limit the lifelong learners' choices
- Monitoring and assessment are for the learners



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... but we need to develop a better understanding about the needs of lifelong learners during different learning phases and contexts



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Thank you for your attention

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