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- + I. D-I-K
- + II. D-I-K-W
- + III. From D-I-K-W to D-I-K-W-M
- + IV. Episteme-Techne-Phronesis
- + V. CADPOM
- + VI. Knowledge Inheritance

- + Data-Information-Knowledge
- + The data–information–knowledge hierarchy has its roots in traditional IT methods and begins typically by identifying requirements
- + From these requirements, users and IT experts distill data from these requirements
- + Data are facts and observations, which in a particular context become information
- + Information used to take decisions forms knowledge upon which people base actions to achieve results

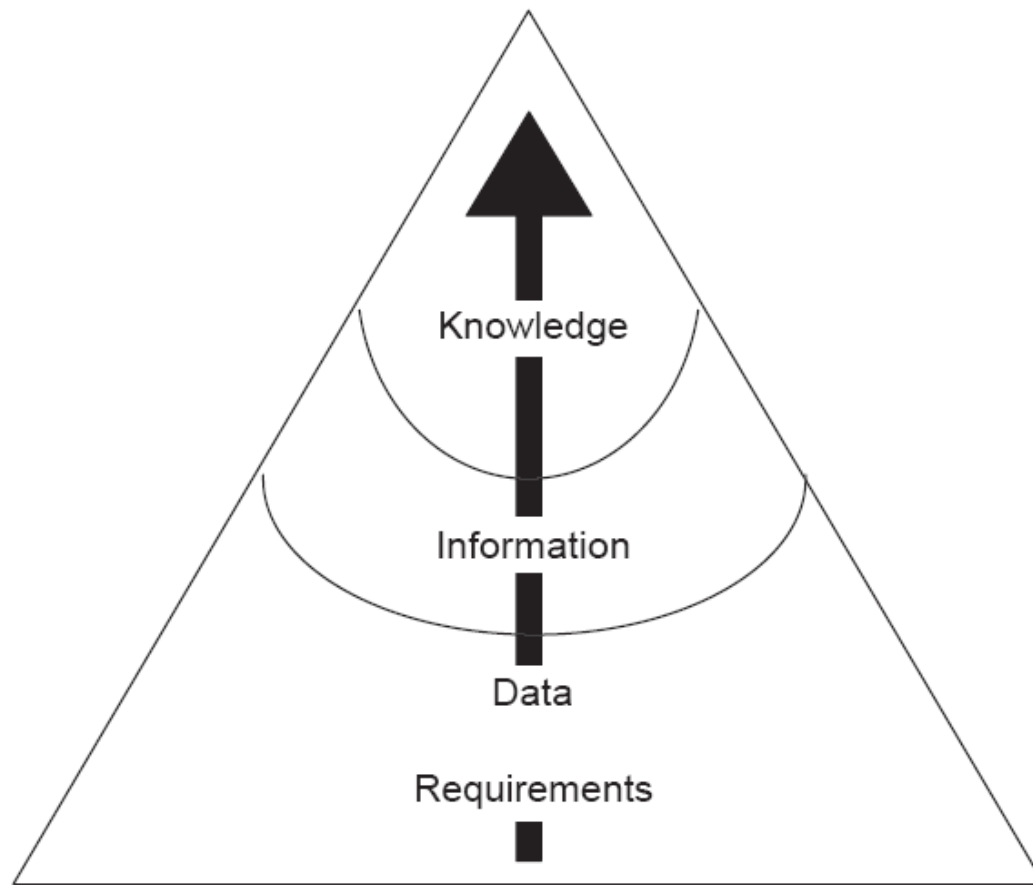
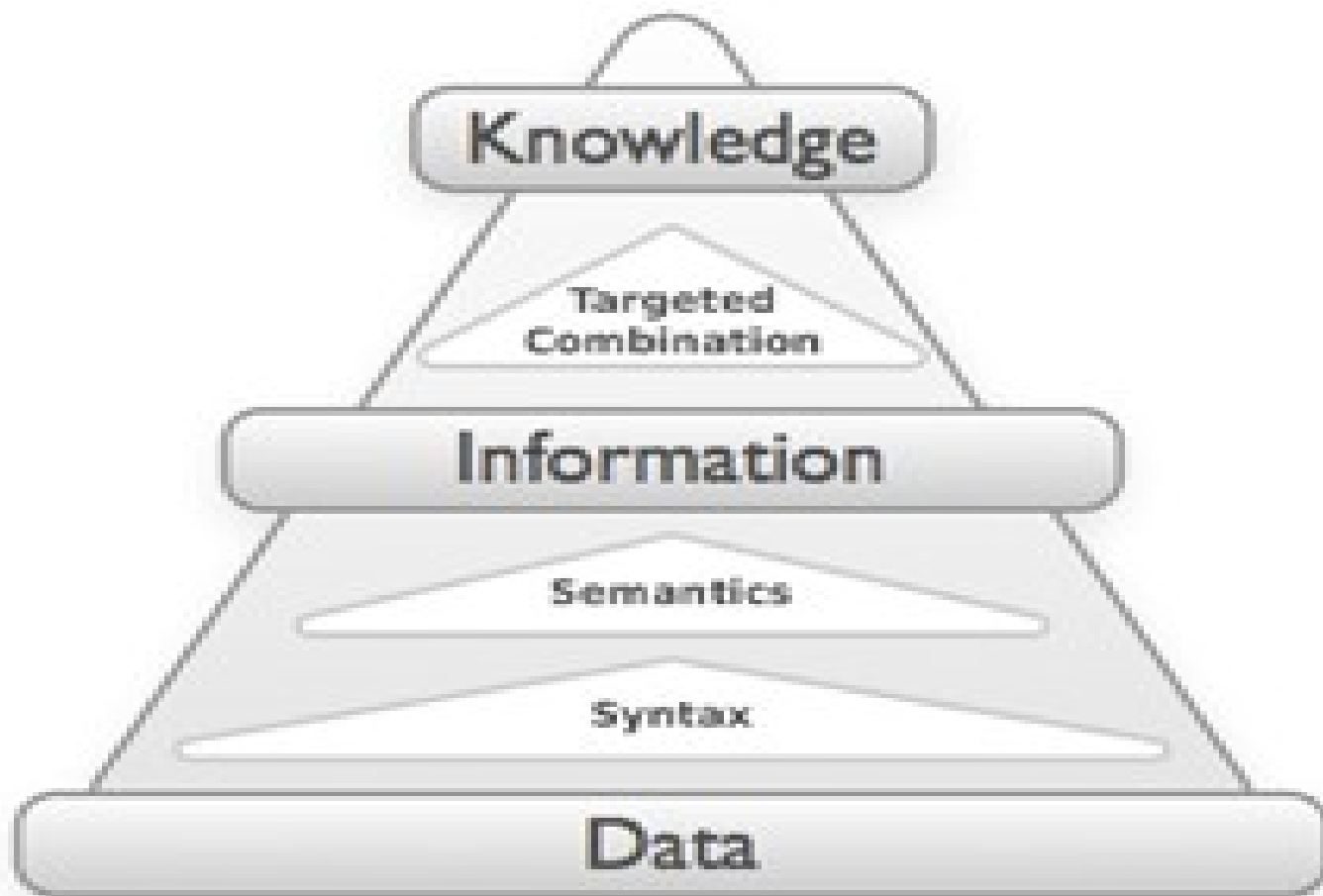


Fig. 1. The data–information–knowledge hierarchy.



K  
N  
O  
W  
L  
E  
D  
G  
e

first knowledge (rough, including  
rearranged Data, Information)

second knowledge (Interesting)

third knowledge (Actionable)

fourth knowledge (Service for people)

- + Data Base
- + Data house
- + MIS
- + Data mining
- + Text mining
- + Web mining
- + DDDM(Domain Driven DM);Intelligent DM

Knowledge II ( Interesting Knowledge)-----

Expert mining

Knowledge III ( Actionable Knowledge)

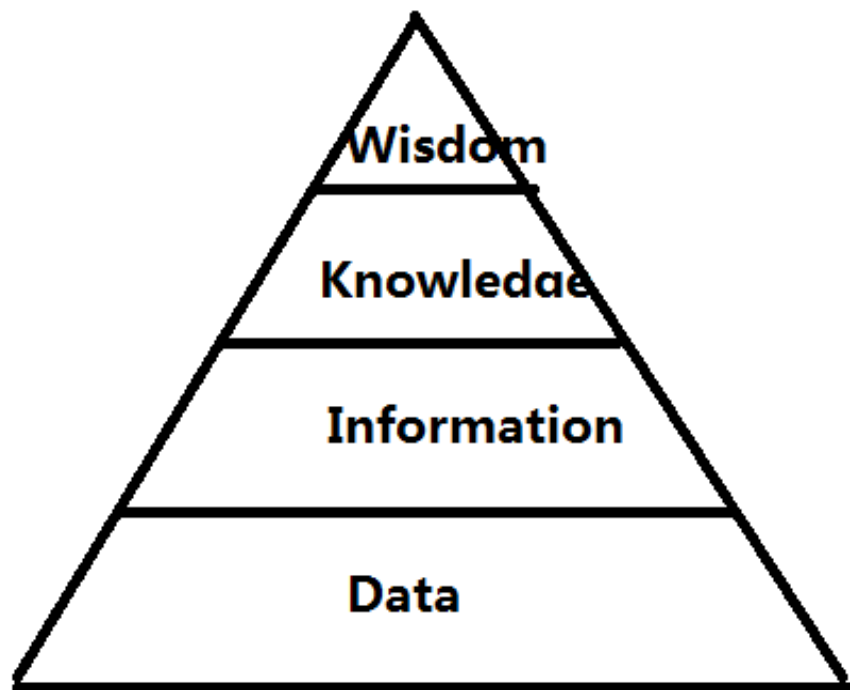
Master mining+ Education

Knowledge IV ( Available and useful Knowledge)

Phronesis

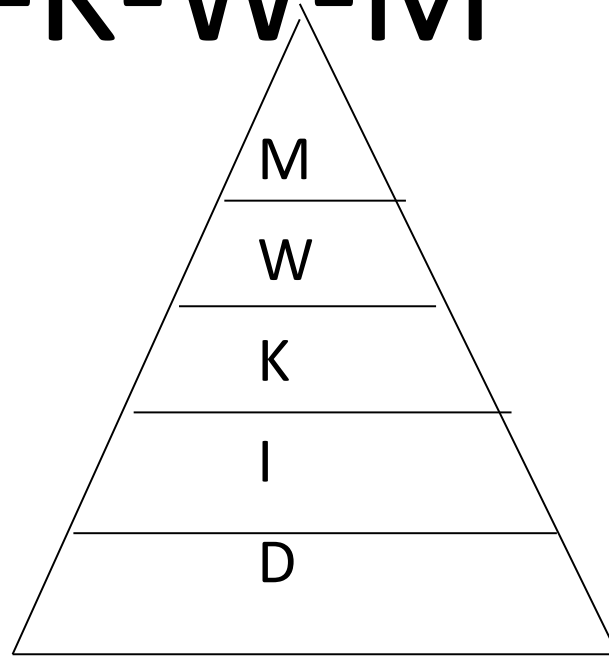
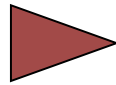
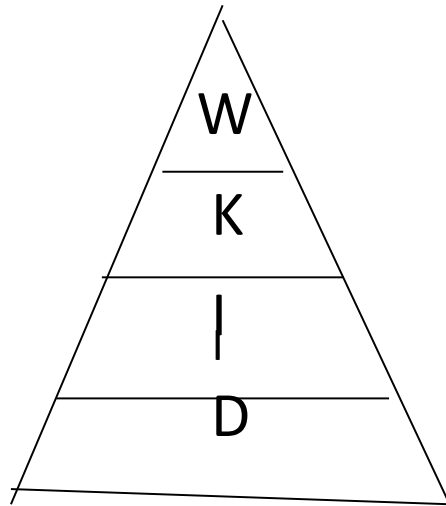


- + Data-Information-Knowledge –Wisdom
- + The "**DIKW** Hierarchy", also known the "Knowledge Pyramid", refers to relationships between **d**ata, **i**nformation, **k**nowledge, and **w**isdom.  
“
- + Typically information is defined in terms of data, knowledge in terms of information, and wisdom in terms of knowledge”.



- + In 1987, professor Milan Zeleny mapped the elements of the hierarchy to knowledge forms:
- + *know-nothing(D)*,
- + *know-what(I)*,
- + *Know-how (K)*,
- + *know-why(W)*

# III. From D-I-K-W to D-I-K-W-M



- + Data ( Fact, observation)
- + Information
- + Knowledge ( Explicit, Tacit)
- + Wisdom
- + Moral (Value—Worldview)

+ **Episteme (Scientific Knowledge):** --Wuli

Universal, context-free and objective knowledge (explicit knowledge)

+ **Techne (Skills and Crafts Knowledge):** --Shili

Practical and context-specific technical know-how (tacit knowledge)

+ **Phronesis (Prudence/Practical Wisdom):** -Renli

Experiential knowledge to make context-specific decisions based on one's own value/ethics (high quality tacit knowledge)

- + Phronesis is a concept that synthesizes “knowing why” as in scientific theory, with “knowing how” as in practical skill, and “knowing what” as a goal to be realized. Unlike episteme, it emphasizes practices in particular contexts. However, phronesis is not just knowledge within a certain, particular context per se. Since it is knowledge to serve the “common good”, it implies an affinity with universal principles.
- + Knowing-creating
- + Operating-realizing-practicing
- + Moralizing
- + Wise 智 , Operable 用 , Morality 德

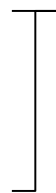
Prof. Nonaka presents six abilities that constitute Phronesis;

- + Ability to make a judgment on goodness.
- + Ability to share contexts with others to create \*ba\*(shared sense).
- + Ability to grasp the essence of particular situations/things.
- + Ability to reconstruct the particulars into universals using language/concepts/narratives.
- + Ability to use any necessary means well to realize concepts for common goodness.
- + Ability to foster phronesis in others to build resilient organization.





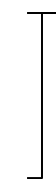
1. Creativity **创造力**  
**慧 wisdom**



智

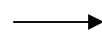
2. Abstraction **抽象力**

3. Dissemination **鼓动力**



4. Practicality **实现力**  
**践 practice**

实



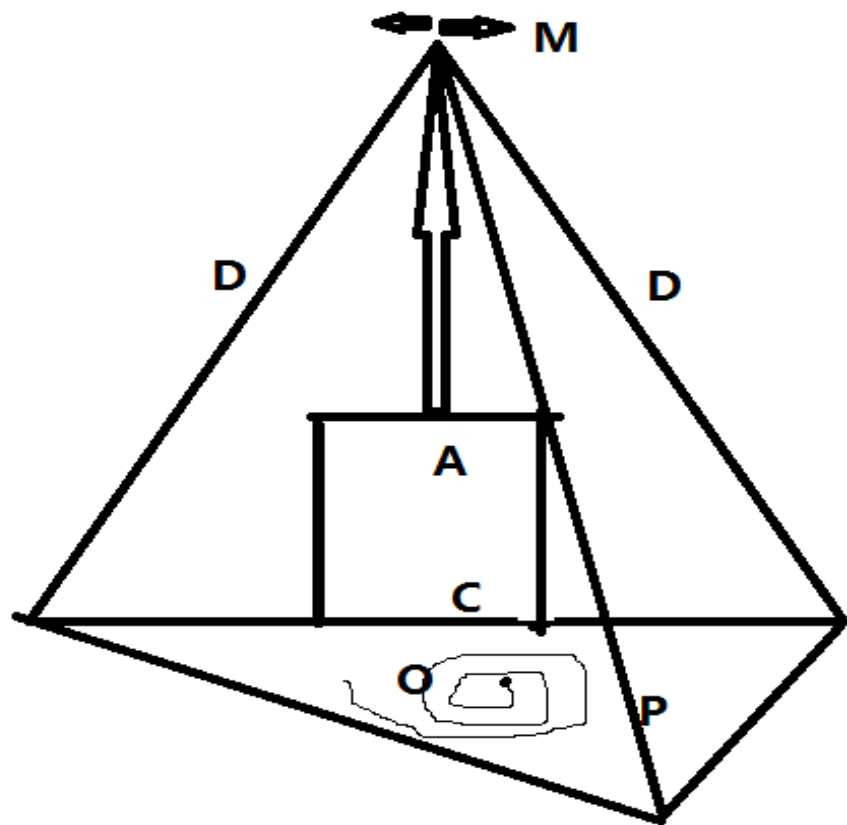
5. Organization **组织力**

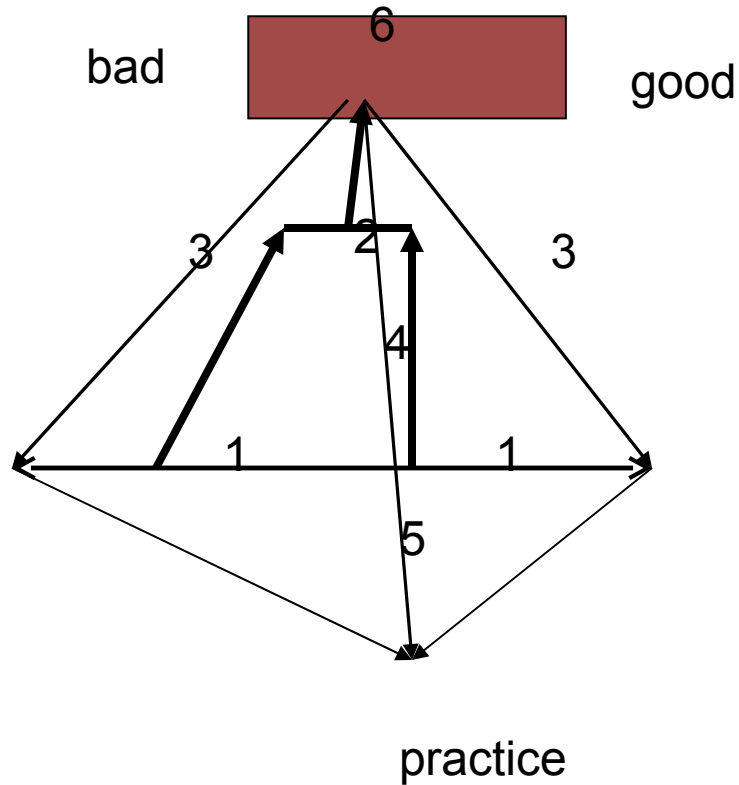
6. Orientation **方向力**

善美 **goodness**

1. grasp the essence -***Creation***
2. abstract to theory -***Abstraction***
3. run exchange, inter-discipline, facilitation-***Diss  
emination***
4. realize technique-***Practice***
5. organize group-***organization***
6. guide by worldview-***moral***

- + Creation
- + Abstraction
- + Dissemination (Facilitation )
- + Practice (Realization)
- + Organization
- + Moral (Orientation, Value)





1. grasp the essence(C)
2. abstract to theory (A )
3. run exchange, inter-discipline, facilitation(D)
- 4.realize technique(P)
- 5.organize group( O)
- 6.guide by worldview(M)

Recently we just wish apply a project "On Master-Disciple education method in TCM education" supported by NSFC

The intentions of this project are:

1. Develop the traditional master-disciple education method,
2. utilize the computer and the expert mining to dig the experiences from famous elder TCM doctors ,
3. use the combination of human and computer,
4. Inherit experiences by the combination of master and disciple,
5. Develop the Phronesis ( practical wisdom)

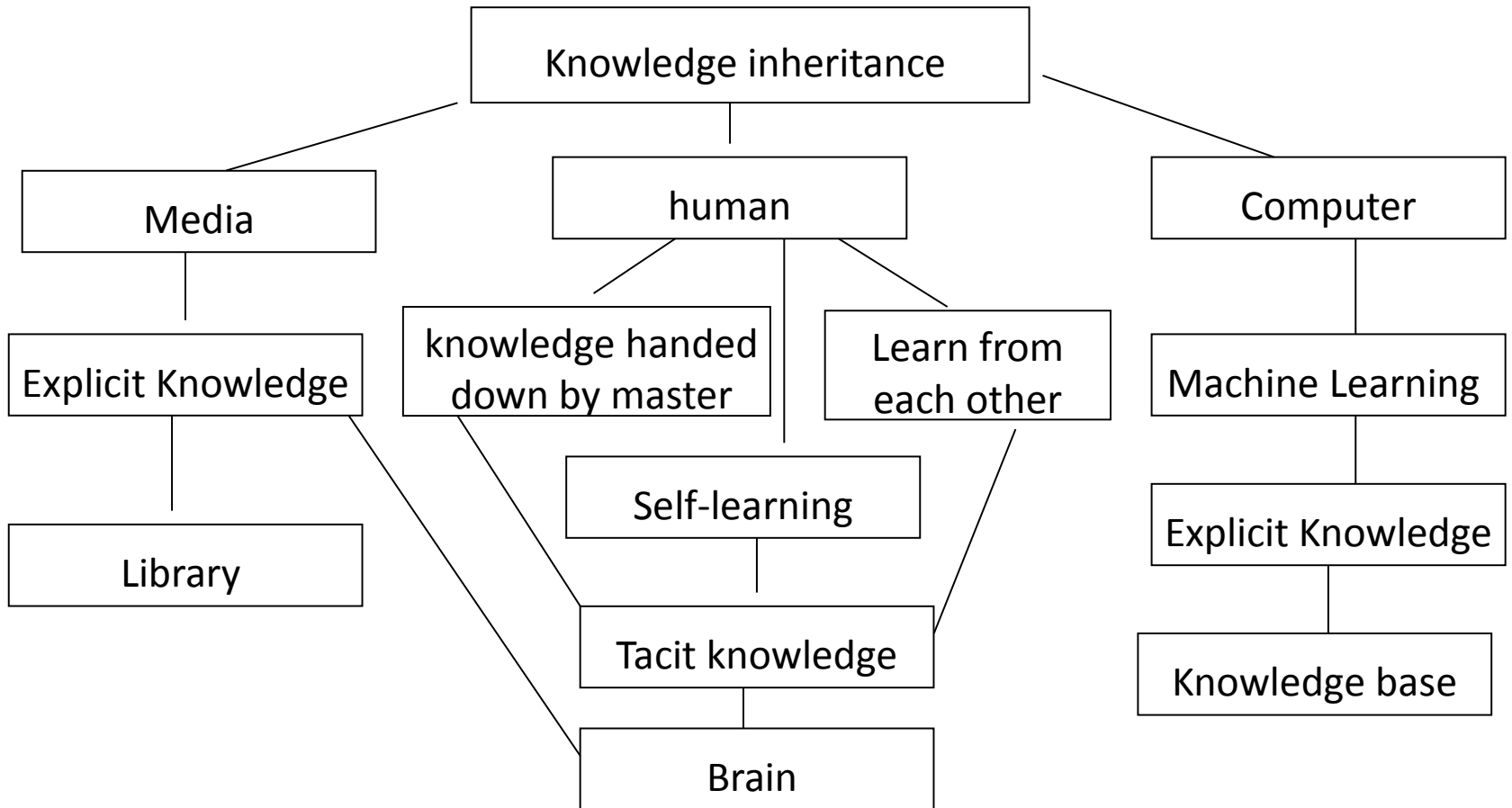


Fig 2 Knowledge inheritance



Contemporary mode  
for inheriting  
the experiences  
and thoughts

Content

Academic thought(Wuli)

Clinical experience(Shili)

Master style(Renli)

Method

literature survey

Education in Univ

**knowledge handed  
down by master**

IT

socilization

social practice

Teacher-student

human- computer

human-network

human-human

- + Two system approaches are suggested:
  1. Meta-synthesis System Approach
  2. Wuli-Shili-Renli System Approach
- + The first approach is used for knowledge creation and synthesis
- + The second one is used for running phronesis

Thank you for your  
attention!