Global Innovation Management and Strategies

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Today's Topic

Innovation and Knowledge Creation: 3

- "Knowledge Management" used to be the management how to share data, information and knowledge among members.

- Innovative companies today consider knowledge and the capability to create and utilize knowledge to be the most important source of a firm's sustainable competitive advantage .

- "Knowledge Management" has become the fundamental factor that companies can, not only secure technological capabilities, but also develop new products and business model concepts.

- We focus on "knowledge creation" and " knowledge management" as the "secret weapon for innovation".

Knowledge Management and Knowledge Creation

"SECI, Ba and Leadership: A Unified Model of Dynamic Knowledge Creation"

(I. Nonaka, R.Toyama and N.Konno)
in (S.Little, P. Quintas and T.Ray eds), *Managing Knowledge*, Sage Publications, London, 2002.

The knowledge creating process

Key factors in the knowledge creating process.

- the SECI process:
  the process of knowledge creation through conversion between tacit and explicit knowledge.

- "Ba" (場）= " Community of practice

- Moderator to organize "Ba(場）"
  = project leader as a facilitator .

- Innovative companies have gradually employed cross-disciplinary, cross functional **and** cross-border new product (service) development systems, to cope with shortening PLC and gaining competitive advantage.

Under the hierarchical organizational structure, free and open ideas are hardly expressed. Each member expresses his or her idea with which his or her boss would be willing to agree.

Y Gaya = "Ba" of IDEO.

- "Ba(場)" does not work under the traditional top down management system. <u>At this kind of Ba, each member would only expresses his (her) idea with which his (her) boss would agree.</u>

  "Ba" is to be organizationally flat and open for the members to express ideas frankly.

"Ba" : IDEO holds meetings, where members express their ideas, in line with each development stage.

"Ba" is a productive chaos in state to create new knowledge.

Therefore, the role of the moderator (facilitator) as knowledge producer becomes much more important than that in the traditional top down system .

Requisite Diversity (Variety)
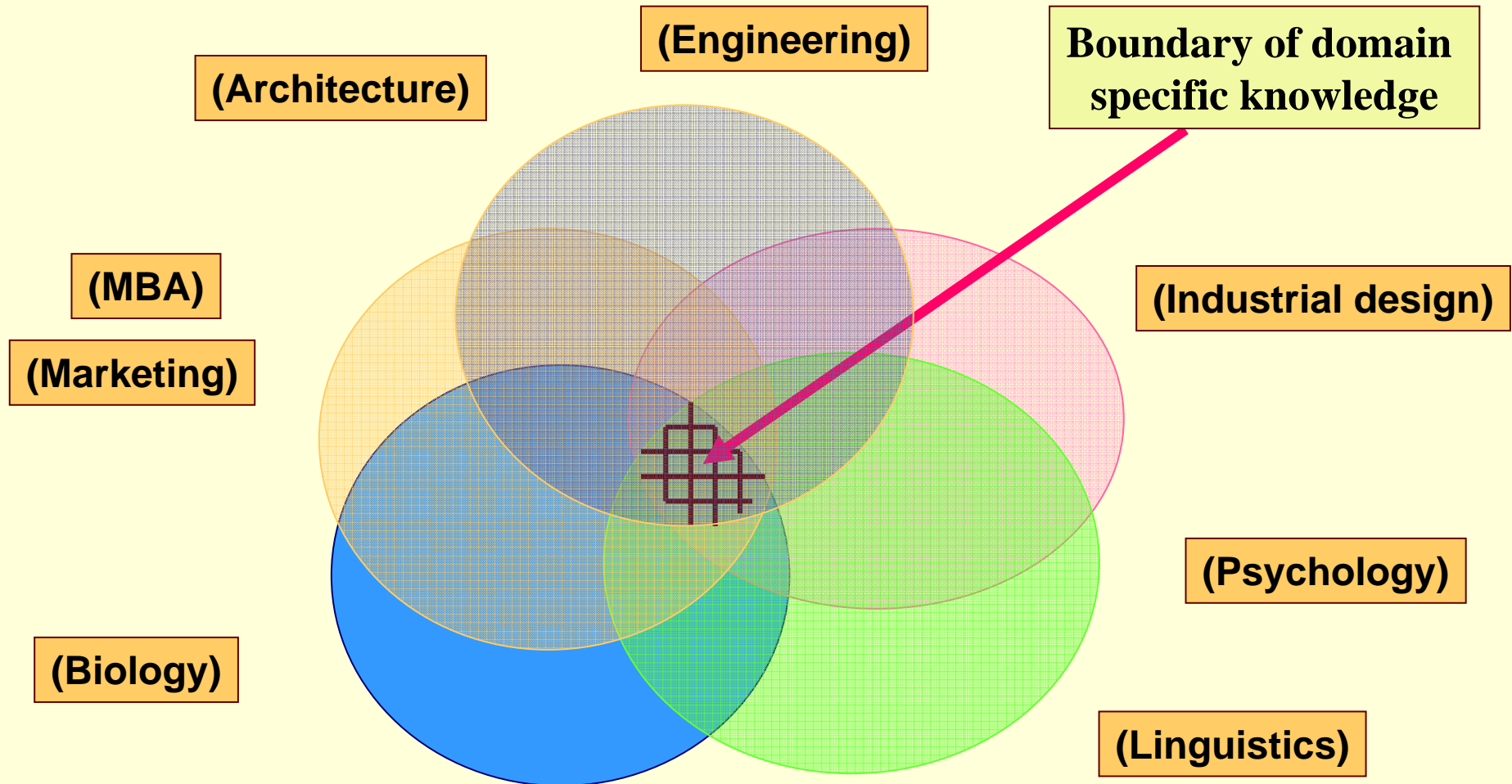## （最小有効多様性）1
disciplinary diversity

- **Radically new insights need diverse domain specific knowledge in science & technology.**

- If "Ba" consists of project members from the same domain or discipline, radically new insights would hardly arise due to the analytical approach, lacking interpretive, or holistic approach.

Domain (Discipline) specific knowledge has its own context.

Domain specific knowledge has its own context.

How can we combine and synthesize diverse domain specific knowledge sharing different context, in order to create new knowledge?

Radically new insights need requisite diverse domain specific knowledge

(Engineering)

(Architecture)

Boundary of domain specific knowledge

(MBA)

(Marketing)

(Industrial design)

(Psychology)

(Biology)

(Linguistics)

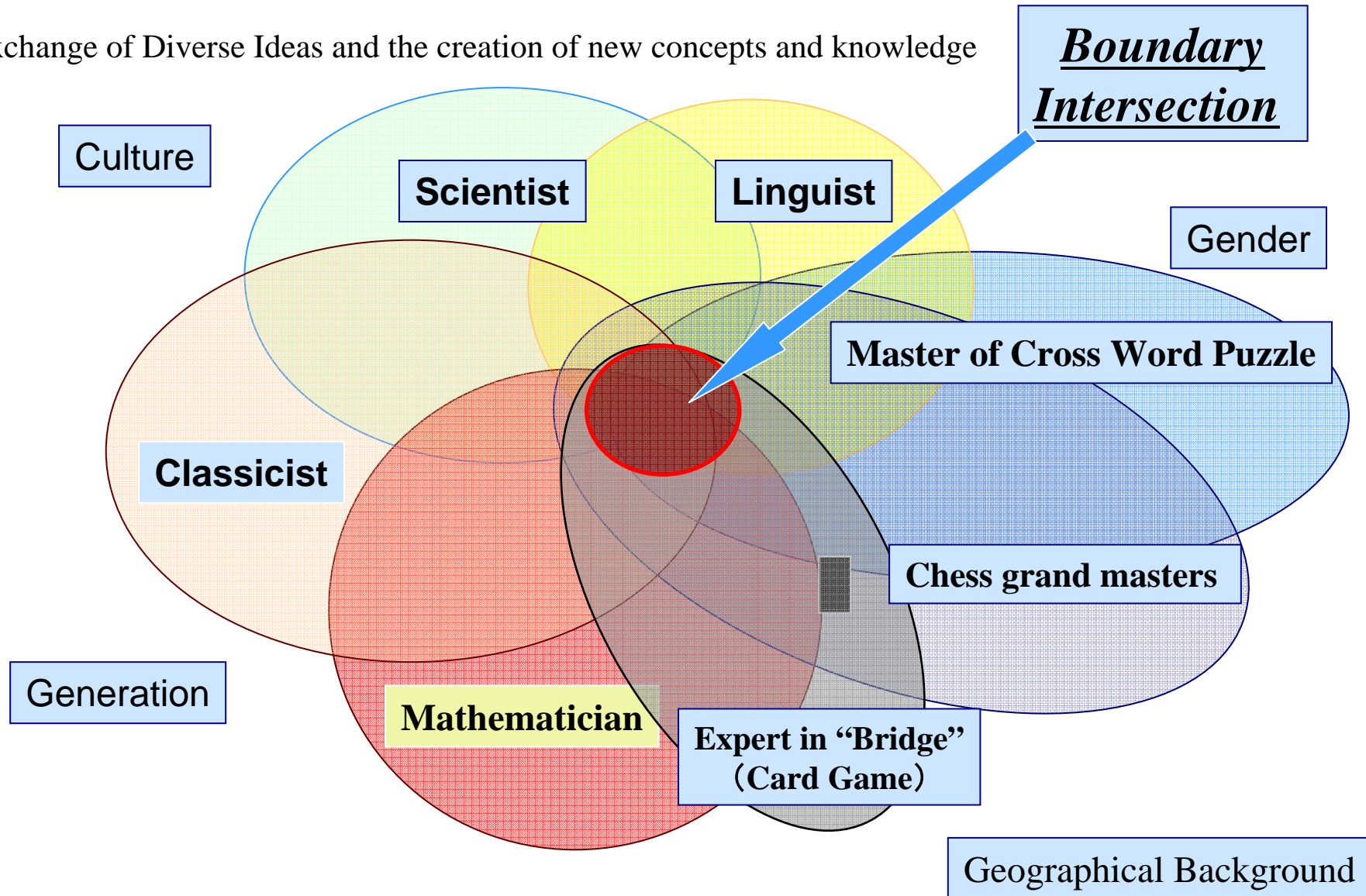**"Radically new insights and developments often arise at the boundaries between domains".**

Source: compiled from T.Kelly(2001), and ABC News "The Deep Dive"

German Secret Code System(=Cipher System）
Enigma：A coding machine

vs

Bletchley Park

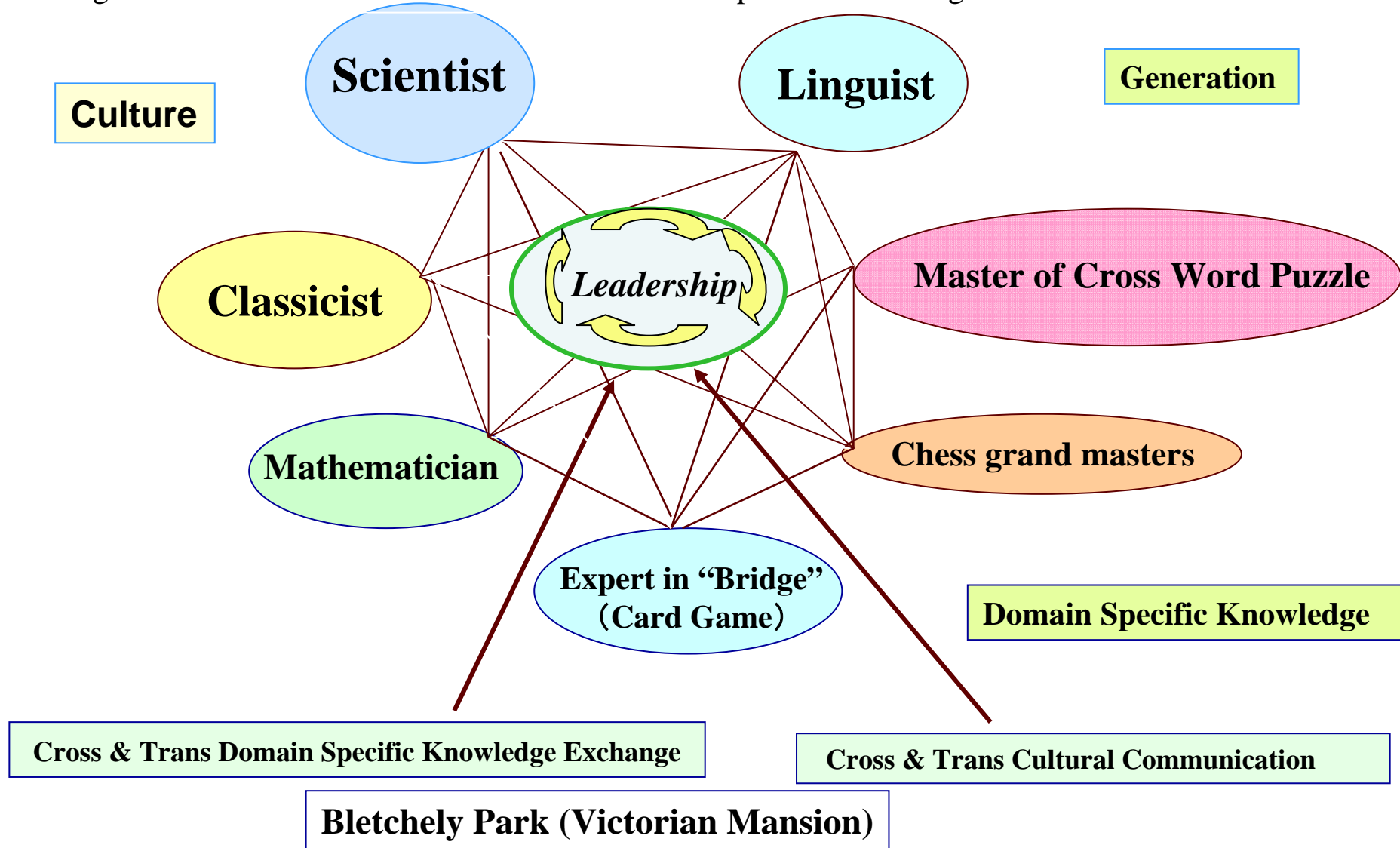Exchange of Diverse Ideas and the creation of new concepts and knowledge

Boundary Intersection

Culture

Scientist

Linguist

Gender

Master of Cross Word Puzzle

Classicist

Chess grand masters

Generation

Mathematician

Expert in "Bridge"（Card Game）

Geographical Background

German Secret Code System(=Cipher System）
Enigma：A coding machine

VS

British **Project Team to break the code system:**

Exchange of Diverse Ideas and the creation of new concepts and knowledge

Culture

Generation

Scientist

Linguist

Classicist

Leadership

Master of Cross Word Puzzle

Mathematician

Chess grand masters

**Expert in "Bridge"
（Card Game）**

Domain Specific Knowledge

Cross & Trans Domain Specific Knowledge Exchange

Cross & Trans Cultural Communication

Bletchely Park (Victorian Mansion)

S.Singh, *The Code Book*, Anchor Books, 1999 『暗号解読』新潮社

Requisite Diversity (Variety)
（最小有効多様性）2
cultural diversity

- **Radically new insights need diverse culture specific knowledge.**

- If "Ba" consists of project members from the same culture, radically new insights would hardly arise due to the analytical approach, lacking interpretive, or holistic approach.

Culture specific knowledge has its own context.

The Mind of the Market !!!

- Markets consist of diverse consumers and customers who have various minds.

- In developing new products, project members must recognize various **minds** of the targeted market.

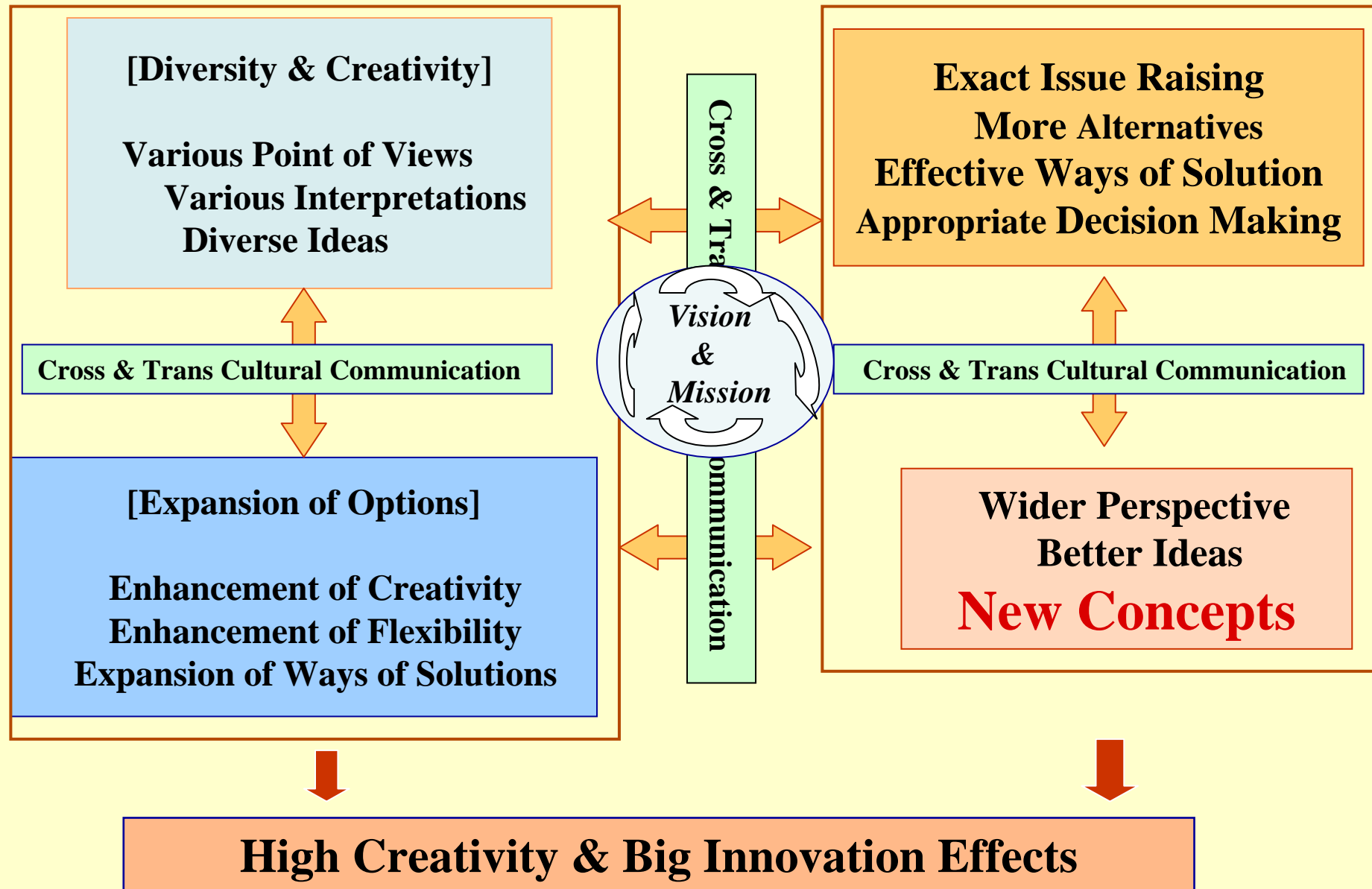- Project members need various cognitive approaches. (認知アプローチ）

Zaltman,G.(2003), How Customers Think: Essential Insights into the Mind of the Market, Harvard Business School Press, Boston. 藤川・阿久津訳『心脳マーケティング』ダイヤモンド社、2005年。

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Explain the SECI model as knowledge creation processes, referring to the case of "The Deep Dive" !!

Key words: context, tacit knowledge, explicit knowledge, SECI Process, Requisite Diversity

： Questions and Comments

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Synergy effects by Multi-cognitive approaches to create knowledge

[Diversity & Creativity]

**Various Point of Views
Various Interpretations
Diverse Ideas**

Cross & Trans Cultural Communication

[Expansion of Options]

**Enhancement of Creativity
Enhancement of Flexibility
Expansion of Ways of Solutions**

Cross & Trans Cultural Communication

Vision & Mission

**Exact Issue Raising
More Alternatives
Effective Ways of Solution
Appropriate Decision Making**

Cross & Trans Cultural Communication

**Wider Perspective
Better Ideas**

New Concepts

High Creativity & Big Innovation Effects

- New knowledge in these innovation processes seem to be often created **at the boundaries** between disciplines, functions and communities.

  In the knowledge economy, therefore, the dynamic boundary management capability to create new knowledge and conceptual framework, by leveraging global open innovation networks, is becoming a "main source of sustained competitive advantages".

- In this process, therefore, **cross-trans cultural communication** among diverse project members play critical roles.

- **Cross-trans cultural management at the boundaries** appears to be essential so as to inspire diverse members to create knowledge, synthesize their ideas, and transform them into new concepts.

New & Main Source of Competitive Advantages in the knowledge economy.

Organizational Capabilities to edit and synthesize ideas which are expressed by various members, and transform them into new products and new concepts of business model

Sustained Competitive Advantage by Sustained Innovation based on synergy effects
by multi-disciplinary and multi-cultural Management

Brief Conclusion

◆ The impact that the increasing importance of knowledge work and technological innovation of ICT affect the formulation and implementation of corporate strategies.

●   We have focused on "knowledge creation" and " knowledge management" as the "secret weapon for innovation".

◆ Companies have not only internationalized business processes, but also enhanced research and development (=R&D) capabilities to produce competitive products (and services) to cope with turbulent competitive environments.

◆ In these processes that make life cycles of products and business model shortened, innovative companies have steadily employed cross-disciplinary and cross-cultural new product development systems.

   The cultural diversity and the disciplinary diversity (diverse specialties) are the key concepts in the knowledge management today.

◆ New knowledge in these innovation processes seem to be created at the boundaries between disciplines and functions through **cross-**disciplinary **and cross-cultural communications** among project members.

◆ In this process, cross-trans disciplinary / cultural management leadership at the boundaries appears to be essential so as to inspire a variety of members to create and synthesize their ideas.

◆ In network oriented industries, in particular, it has become critically more important than ever whether newly developed technological knowledge can successfully obtain a globally standardized position. For this purpose, cross-border/cross-cultural boundary knowledge management capabilities become all the more critical.

In the knowledge economy, therefore, the dynamic boundary management capability to create new knowledge and conceptual framework, by leveraging global R&D networks, is becoming a "main source of sustained competitive advantages".

● Cross disciplinary/cross-cultural boundary knowledge management would emerge as one of 'Critical issues of business management research in the 21st century'

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How can we combine and synthesize
diverse domain specific knowledge and culture
specific knowledge, sharing different contexts,
in order to create new knowledge ?

Key words:
context, tacit knowledge, explicit knowledge, SECI Process,
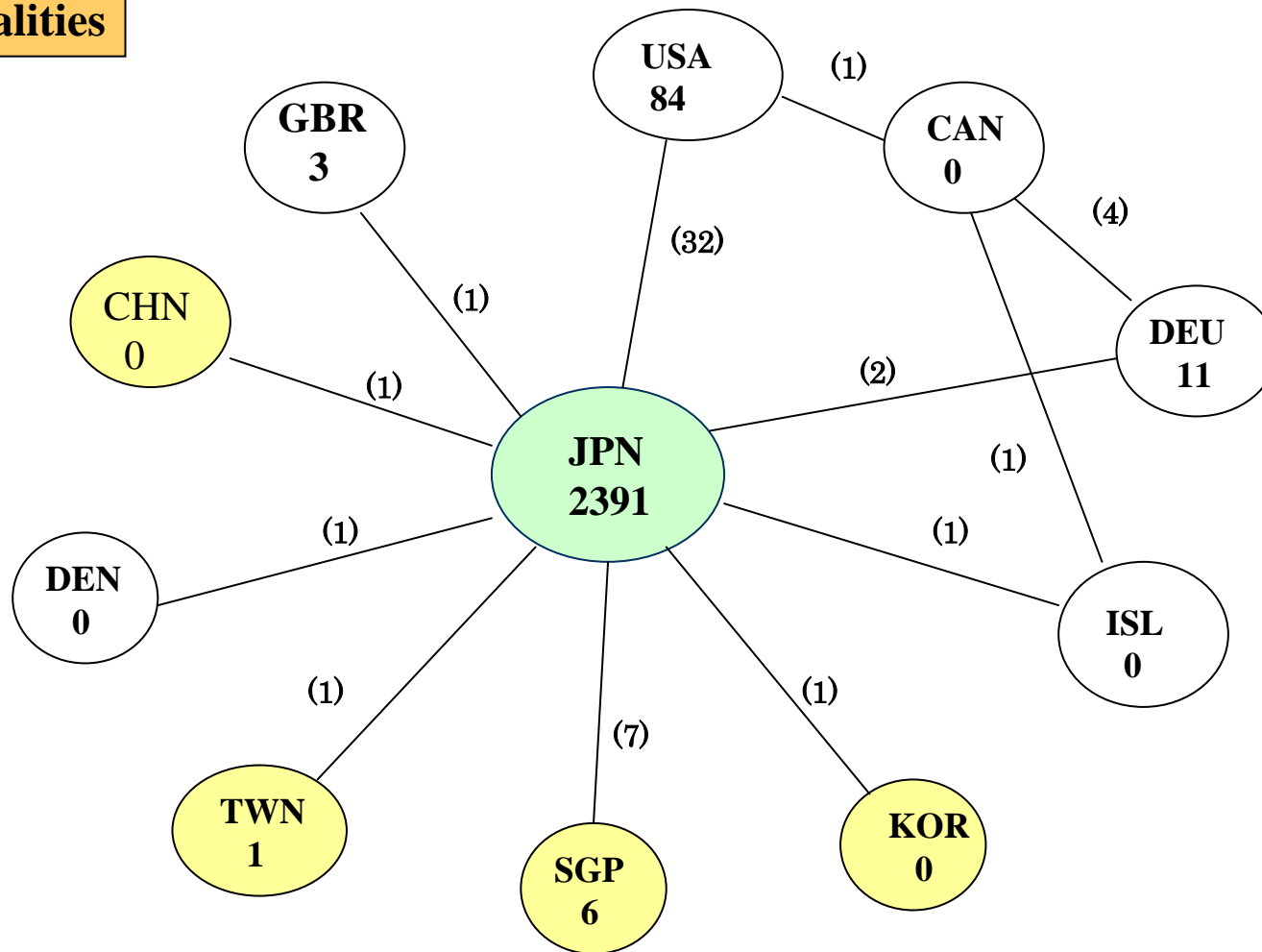Requisite Diversity

: Questions and Comments
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International R&D System of Panasonic in 2005
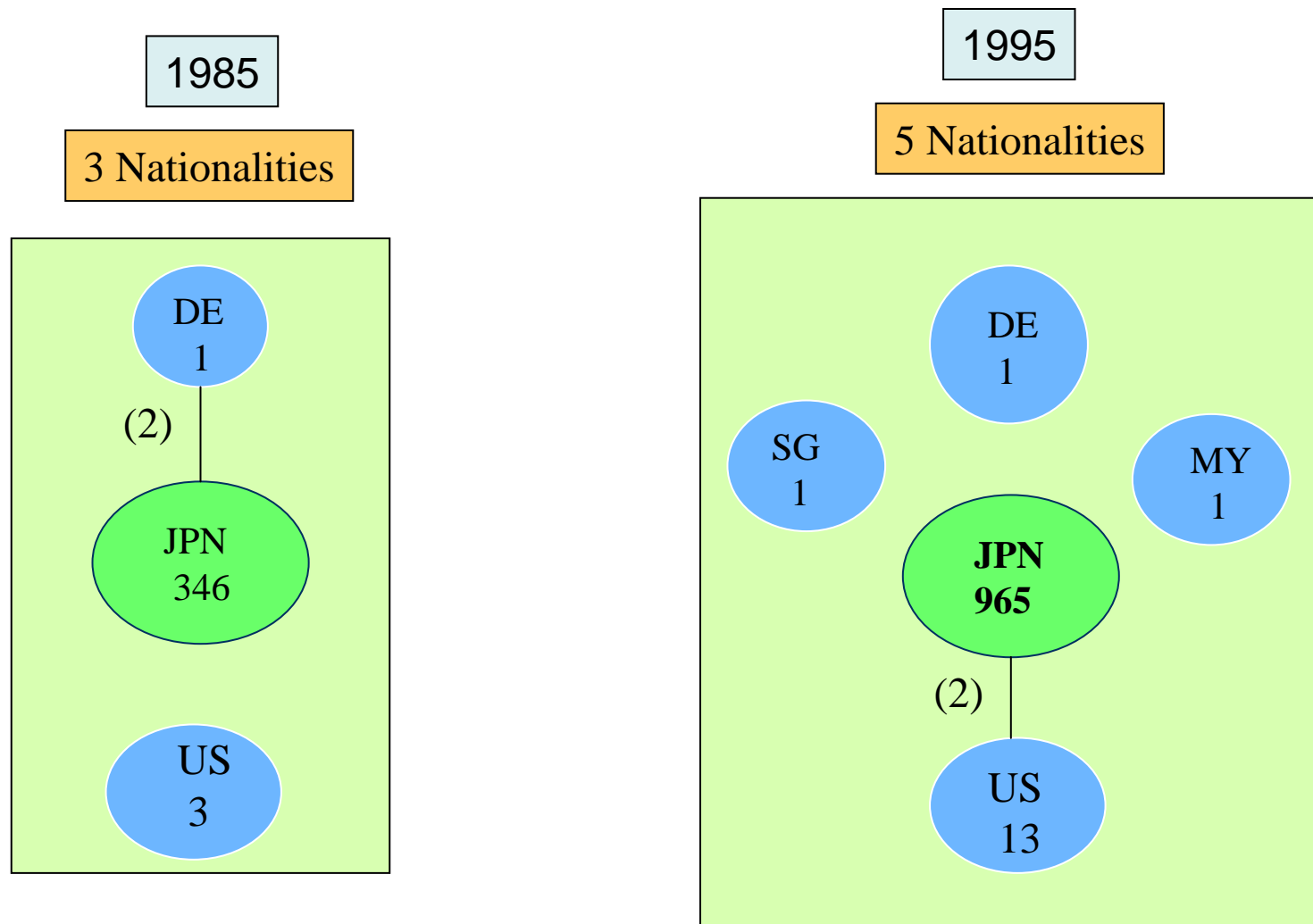## - Nationalities of Inventors and the number of US patents -

11 Nationalities

USA
84

GBR
3

CHN
0

(1)

(32)

(1)

(1)

CAN
0

(1)

(4)

DEU
11

(2)

JPN
2391

(1)

DEN
0

(1)

(1)

ISL
0

(1)

(1)

TWN
1

(7)

SGP
6

KOR
0

International R&D System of Panasonic : in 1985 and in 1995 -Nationalities of Inventors and the number of US patents-

1985

3 Nationalities

DE
1

(2)

JPN
346

US
3

1995

5 Nationalities
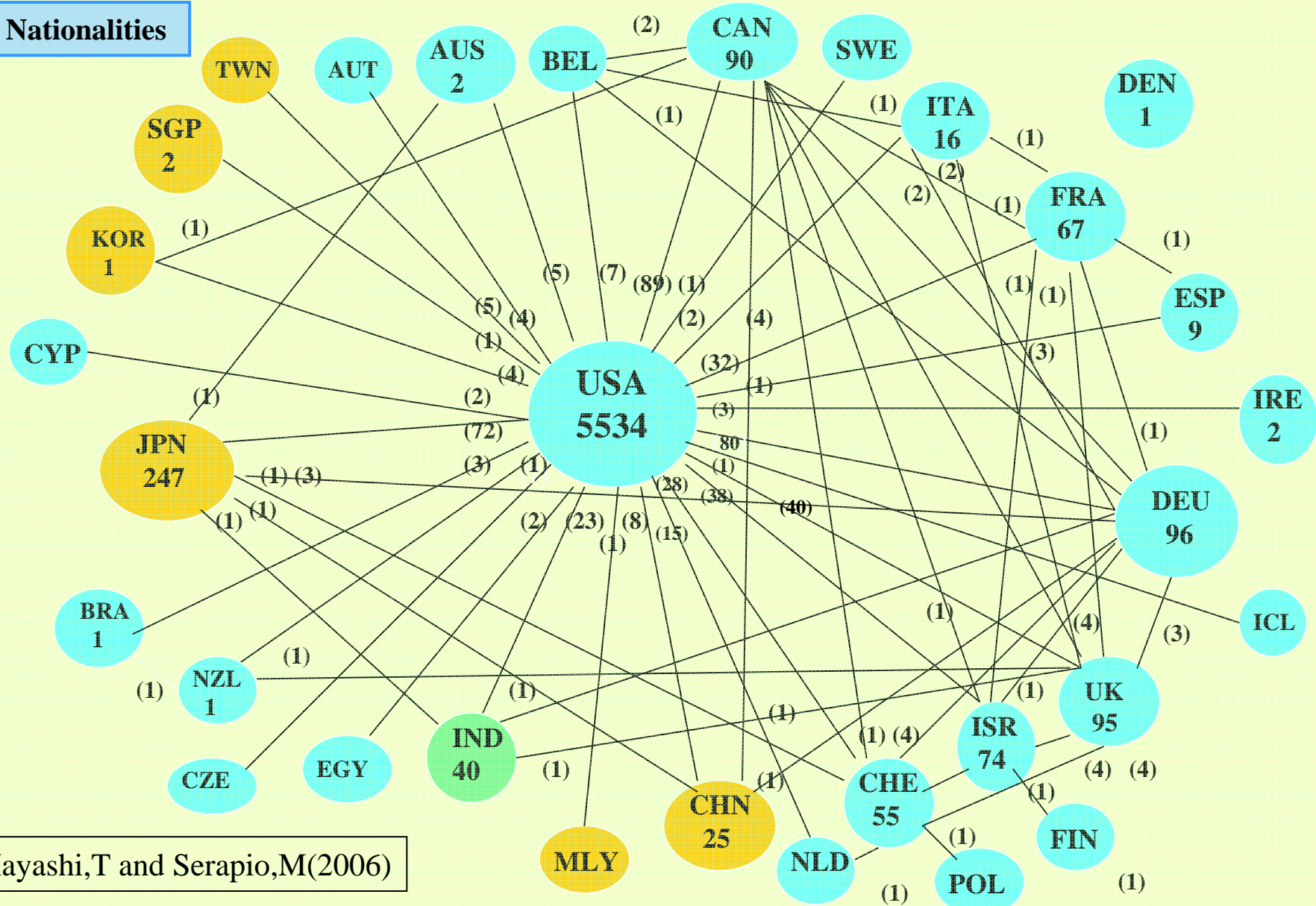
DE
1

SG
1

MY
1

JPN
965

(2)

US
13

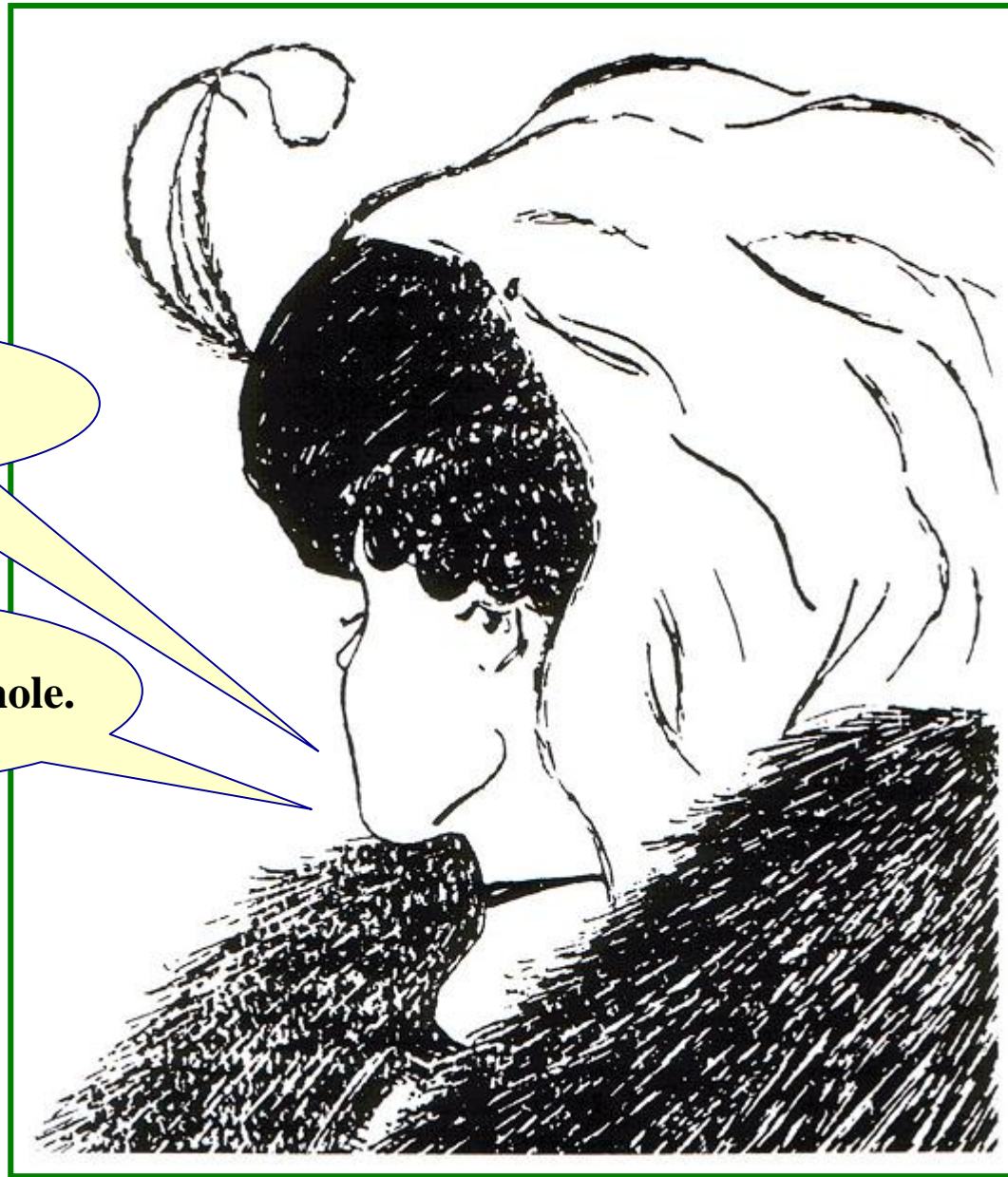Source: Compiled from materials in the USPATFUL database.

Global R&D Networks by IBM Corp.：2005

In terms of the Number of US patents invented by Overseas Institutions to which Inventors belonged
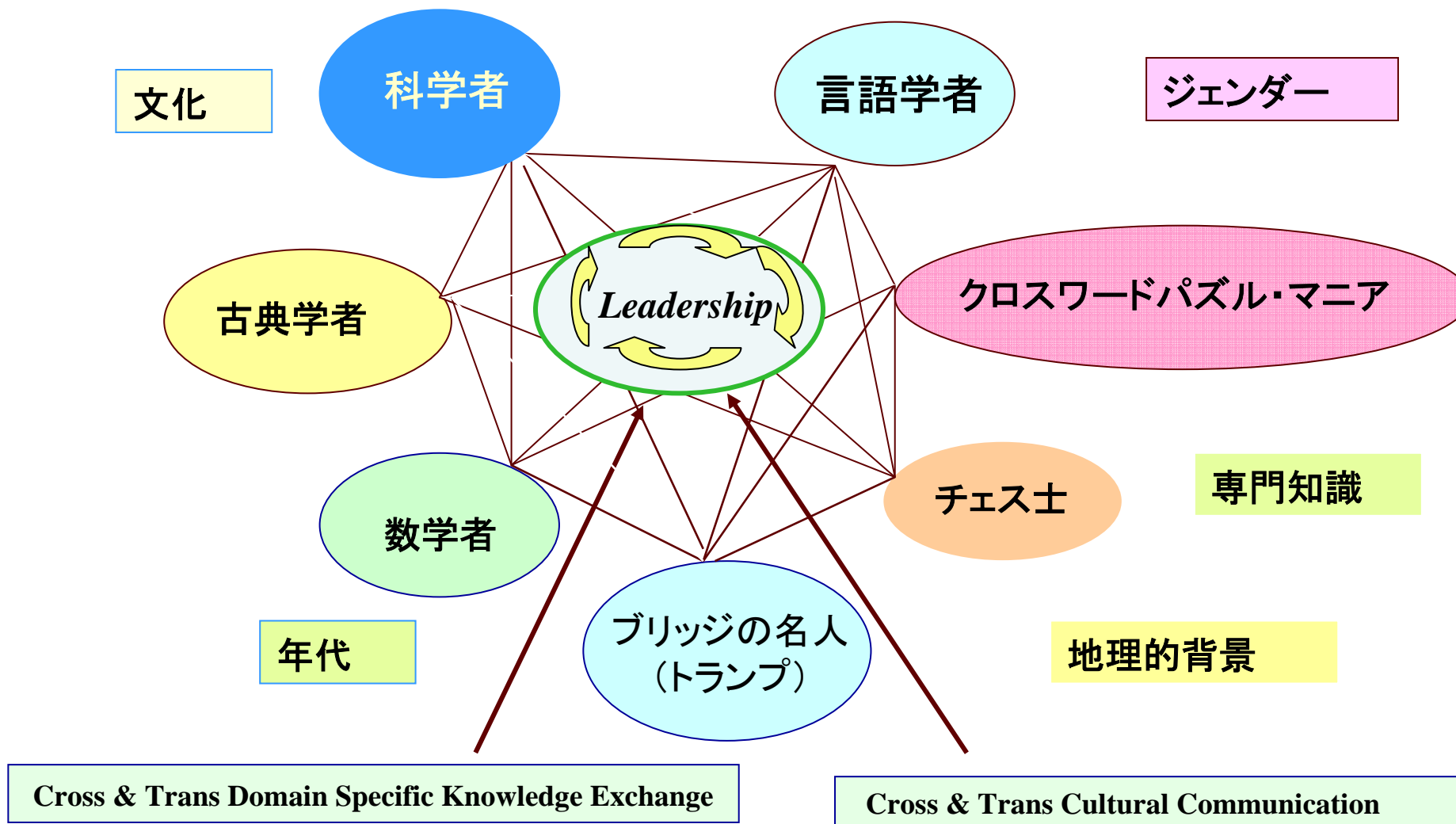
31 Nationalities

Hayashi,T and Serapio,M(2006)

Analytical approach, Interpretive approach, and Holistic approach

暗号システム（エニグマ）　　暗号解読チームの構成

文化

科学者

言語学者

ジェンダー

古典学者

Leadership

クロスワードパズル・マニア

数学者

チェス士

専門知識

年代

ブリッジの名人
（トランプ）

地理的背景

Cross & Trans Domain Specific Knowledge Exchange

Cross & Trans Cultural Communication

S.Singh, *The Code Book*, Anchor Books, 1999　『暗号解読』新潮社

3-34 Nishi-Ikebukuro, Toshima-Ku

Without being put into context, it is just Information
or data
It is the absolute, static, and non-human.

Context

- When put into a Context, it becomes knowledge.

Knowledge

The address of my house is 3-34 Nishi-Ikebukuro, which is next to the beautiful library.

Combination

- Combination:
  (from explicit knowledge to explicit knowledge)

The process of converting explicit knowledge into more complex and systematic sets of explicit knowledge.

This is the new knowledge creation process that synthesizes knowledge from many different sources in one context.

The early stage of prototyping.

Internalization

- ## Internalization
  (from explicit knowledge to tacit knowledge):

  The process of embodying explicit knowledge into new more sophisticated tacit knowledge.

  This is the creation process of "T.K".

- the latter process of prototyping