Knowledge transfer at BMW’s onboard app platform

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Tutorial 05.02.2021

Knowledge Coordination, Transfer and Integration

- Firm relies on knowledge of specialists and only creates value if these knowledge **domains are coordinated and integrated** into the firm
- For knowledge to be coordinated and integrated, **communication and transfer** via conversion mechanisms is necessary

High costs of communicating and making consensus decisions, especially when tacit knowledge is included

→ Firms use mix of rules, routines and other integration mechanisms and leave collaborative problem solving and decision making for important, complex tasks

- All knowledge integration mechanisms are based on employees having different knowledge domains but **require the existence of common knowledge**

Definition and Typology of Common knowledge

"Comprises those elements of knowledge common to all organizational members: The **intersection of their individual knowledge sets**" (Grant, 1996)

➔ Allows employees of a firm to share and integrate parts of knowledge, which is not common between them

Language: Speaking the same language is detrimental to knowledge sharing/integration approaches based on communication between employees

Other symbolic communication: Literacy, numeracy but also proficiency in used computer software are also needed for efficient communication

Commonality of specialized knowledge: Value of knowledge integration is created through extent of identical specialized knowledge ➔ None is as bad as too much!

Shared meaning: Establishing a shared understanding, having a common ground, between employees supports effective knowledge coordination

Recognition of individual knowledge domains: Employees need to be aware of other employees' knowledge domains

Recap: Knowledge Conversion

Knowledge Conversion

	Tacit	Explicit
Tacit	Socialization	Externalization
Explicit	Internalization	Combination

Socialization: Converting tacit into tacit knowledge through shared experiences

Externalization: Articulating, eliciting or translating tacit into explicit knowledge, make use of metaphors, analogues, concepts, models etc.

Combination: Combining, editing and processing explicit knowledge to convert it into new and more usable explicit knowledge

Internalization: Understanding and absorbing explicit knowledge to turn it into tacit knowledge, embodied in actions and practices

➔ **Make knowledge transferable within an organization through knowledge conversion in order to create value**

Impact of Common Knowledge on Knowledge Conversion

Without common knowledge, the conversion of knowledge (e.g. from tacit to explicit in a communication-based mode of knowledge integration) can result in a **substantial knowledge loss**

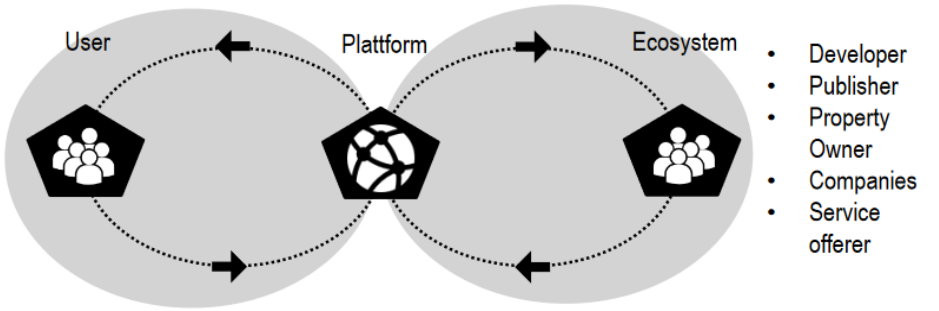
→ Common knowledge poses as foundation for **successful knowledge conversion**

Examples:

- No **communication-based conversion** of knowledge, e.g. socialization, is possible **without common language**
- No **internalization/externalization** (tacit ➔ explicit) is possible without **shared meaning**
- **Recognizing individual knowledge domains** enables the **combination of explicit knowledge** of two individuals
- **Commonality of specialized knowledge** makes it possible to convert knowledge beyond a superficial level

Recap from Lecture on Digital Platforms

Value Co-Creation Process



Parker et al. (2016)

Platform value-creating mechanisms

Efficient and convenient facilitation of transactions

- Interact & exchange value

Provisions of ressources make the digital platform a breeding ground for innovation

- E.g. development tools

Evolution of a Platform Ecosystem at BMW

Status Quo BMW Onboard platform:

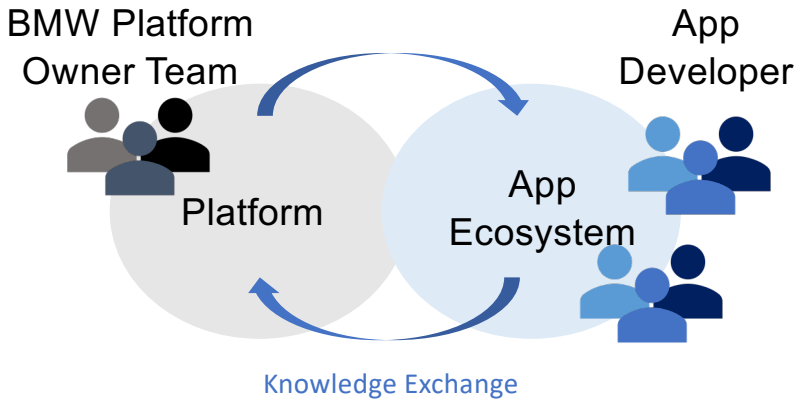
- Need for business model digitalization
- Launch of an app platform integrated within the infotainment system
- Platform ownership at BMW team
- Open to app developers

Complications:

- Challenge of knowledge sharing
- Lack of common knowledge and interaction standards

➔ Threat to the value co-creation mechanism of the platform

Source: BMW



Developer Portal

Knowledge Conversion

	Tacit	Explicit
Tacit	**Socialization** - Developer Meet-ups	**Externalization** - Standardization of Developer Requests
Explicit	**Internalization** - Learn from previously published requests	**Combination** - Developer Portal itself

Common Knowledge

Language: Important for a shared feedback platform.

Other symbolic communication: One single source of information and rejection of other requests.

Commonality of specialized knowledge: Included in Explore section of BMW Docs important for new feature suggestions.

Shared meaning: Accessibility of previous requests is necessary for all developers (e.g. BMW Docs including tutorials and documentation).

Recognition of individual knowledge domains: Platform enables developers and platform owners to be aware of individual knowledge domains.

Starter App

Knowledge Conversion

	Tacit	Explicit
Tacit	**Socialization** - Explanation of Starter App	**Externalization** - Codifying the instruction process
Explicit	**Internalization** - Training for new starters from App	**Combination**

Common Knowledge

Language: Common language is required for reusability.

Other symbolic communication: An agreed programming language is required for reusability.

Commonality of specialized knowledge: Conceptual app development skills.

Shared meaning: Onboarding process on equal standards for each starter.

Recognition of individual knowledge domains: Transfer of responsibility for starter app to platform team.

App Review

Knowledge Conversion

	Tacit	Explicit
Tacit	**Socialization** - Step 1 and 2 Review Gate Meetings	**Externalization** - Standardization of Review process
Explicit	**Internalization** - Review process	**Combination** - Automatization of the third reviewing gate

Common Knowledge

Language: In meetings as well as in the processes a common language is necessary.

Other symbolic communication: In the standardization process necessary.

Commonality of specialized knowledge: Difference in knowledge between developer teams and the platform teams.

Shared meaning: Process of App review was mandatory for all involved projects.

Recognition of individual knowledge domains: App developers were aware of platform team´s individual specialized knowledge.

External Platform Contributions

Knowledge Conversion

	Tacit	Explicit
Tacit	Socialization - Meetings	Externalization - Repository
Explicit	Internalization - Individuals can use the repository	Combination

Common Knowledge

Language: Language understanding in the repository is mandatory.

Other symbolic communication: Repository as the main source of information.

Commonality of specialized knowledge: Repository shows the commonality of knowledge between developer and platform team.

Shared meaning: Availability of the code for all is useful for many stakeholders.

Recognition of individual knowledge domains: Possibility for external contributions recognizes the platform team's limited ability to design a "complete" platform and the need for inclusion of the app developers

Wrap-up Common Knowledge & Knowledge Integration @ BMW

- All knowledge conversion types and common knowledge are relevant to BMW.
- Most initiatives at BMW aim at creating standards and a shared meaning as well as becoming aware of individual's knowledge.
- Value creation for app developers, platform team and the remaining firm through successful knowledge conversion and established common knowledge.
- It's all about the People: Basis for effective knowledge integration is laid, now it depends on the use of the tools/ initiatives from the employees

Discussion Questions

When do you benefit from common knowledge in your daily life?
And where have you missed some form of common knowledge?

What benefits do you see by the knowledge internalization of the developers in the starter app example?

Do you think it makes sense for BMW to develop their infotainment apps from scratch?

References

- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic management journal, 17*(S2), 109-122.
- Weiss, N., Wiesche, M., Schreieck, M., & Krcmar, H. (2020). Learning to be a Platform Owner: How BMW Enhances App Development for Cars. *IEEE Transactions on Engineering Management*.