Managing New Product Development Teams

The question posed (1)

By using teams to solve new product development issues, firms benefit from the experience and knowledge base of several individuals.

Team **size**, **composition**, **structure**, l**eadership** and **administration** are all factors that will impact the success of a new product development team.

The optimal team size will bring enough experience to the table, but not be so big as to push administrative costs and communication problems out of control.

The question posed (2)

Teams composed of individuals from different functional expertise will benefit by a broader range of expertise and viewpoints.

Having team members who are diverse in other ways (e.g. organizational tenure, age, cultural background, gender or demographics) will also add value to the team because of the experience and knowledge they add.

The risk, however, is that diversity will increase coordination and communication costs.

This effect can be mitigated by long-term contact among team members and by providing incentives to work cooperatively.

The question posed (3)

Team structure can also impact team success.

Factors such as co-location, permanence, and the type of leader (level of authority, experience, managerial skills) should be matched to the type of project being undertaken.

Additionally, the use a project charter and contract book are useful tools in keeping all team members focused on the projects goals and help each team member to feel a sense of ownership in the project.

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The question posed (4)

When a project requires the unique skills of individuals who are geographically dispersed and unable to be reassigned, firms might use virtual teams (teams that meet via information technology rather than through face-to-face contact).

While information technologies have made this a more feasible method of working, the virtual team requires special attention to the issues concerning team member participation, cooperation and trust.

The question posed (5)

Many organizations now use cross-functional teams to lead and manage the NPD process.

There is considerable variation in how these teams are formed and managed.

The chapter will look at size, composition, structure, administration, and leadership of teams.

Team Size

- **Team size** affects a team's ability to draw upon the **efforts and expertise of multiple individuals** and the **costs associated with coordinating** team members.
- Teams can often **outperform individuals** suggesting a direct relationship between team size and potential for success.

Team Size

- However, large teams have **drawbacks** including:
  - Greater **administrative costs** and more frequent **communication problems**.
  - Difficulty developing a **shared sense of identity** among team members.

►Greater potential for social loafing (i.e. the likelihood of individuals thinking they will not receive full credit, or blame, for individual contribution to team effort and thus not contributing their full effort).

Team Composition

- Team composition **can also affect the** knowledge **of the team, its** access to resources**, and its** coordination costs**.**
- Including members from multiple functions of firm ensures greater coordination between functions.
- Firms around the world rely heavily on cross-functional teams for their new product development efforts.

Team Composition

The **advantages** of cross-functional teams include:

- The development of a **broader knowledge base**.
- The "**cross-fertilization of ideas**".
- The opportunity to draw on a **wider mix of information sources.**
- **Coordination among multiple functional areas** of the firm**.**

Team Composition

The **disadvantages** of cross-functional teams include the following:

- **Increases in coordination and communication costs**.
- **Difficulty in building a cohesive team** with diverse members because the preference of most individuals is to interact with people they perceive as similar (i.e. homophily).

►**Long-term contact**, however, can improve communication and cohesion for heterogeneous teams with the end result being a team with more information.

Research Brief : Why Brainstorming Teams Kill Breakthrough Ideas

- Dozens of laboratory studies have shown that brainstorming groups produced fewer ideas and ideas of less novelty than the sum of the ideas created by the same number of individuals working alone.

Research Brief : Why Brainstorming Teams Kill Breakthrough Ideas

- Three main reasons:
  - Fear of Judgment – people self-censor many of their most creative ideas for fear of being judged.
  - Production Blocking – when one person is talking, others are blocked from ideating.
  - Feasibility Trumps Originality – groups tend to weight "feasible" more highly than "original".

►Indicates that people should brainstorm alone first and elaborate their ideas before moving into team development.

Research Brief: Boundary Spanning Activities in New Product Development Teams

The ability to manage relationships outside the team's boundaries **is another key to a successful innovation team.**

Research has shown that these activities are most effective when performed early **in development process.** Gatekeepers **serve as important links to these outside relationships.**

Research Brief: Boundary Spanning Activities in New Product Development Teams

Three primary types of boundary spanning activity are:

- **Ambassador** activities include representing the team to others and protecting the team from external interference.
- **Task coordination** activities include coordinating and negotiating with other groups.
- **Scouting activities** include **scanning for ideas** and information that might enhance the team's knowledge base.

Teams Structure

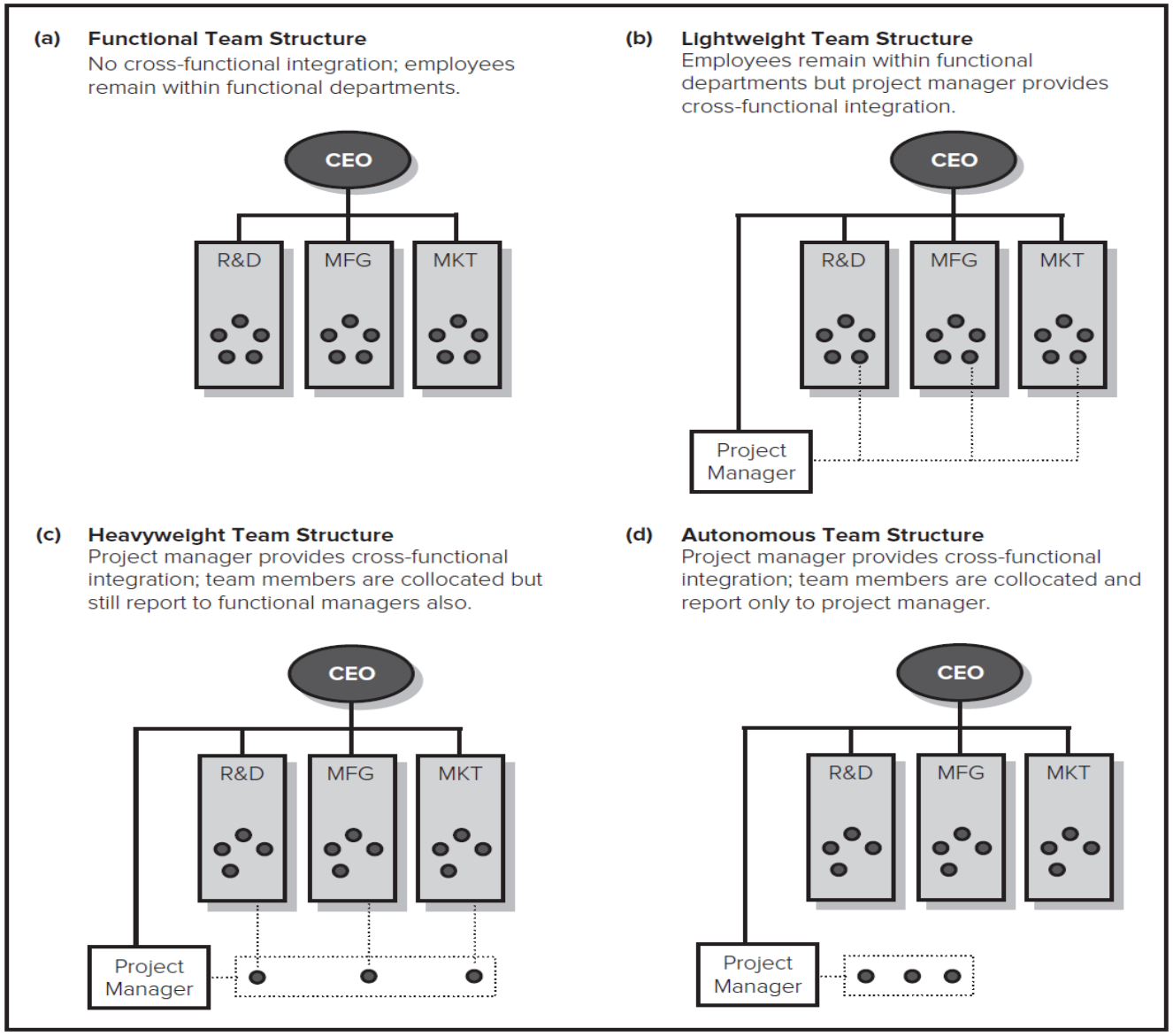
Teams may be classified into **four types**:

Functional.

Lightweight.

Heavyweight.

Autonomous.



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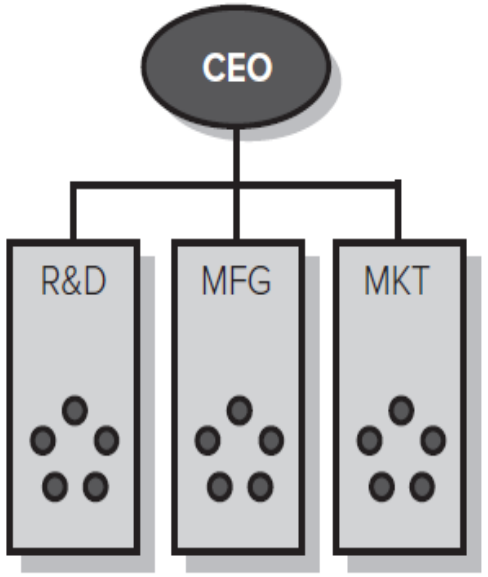
Functional Teams.

- Members report to functional manager.
- Temporary, and members may spend less than 10% of their time on project.
- Typically no project manager or dedicated liaison personnel.
- Little opportunity for cross-functional integration.

These teams are relatively **easy to implement** but usually suffer from a **lack of cross-functional coordination**.

(a) Functional Team Structure

No cross-functional integration; employees remain within functional departments.



LIGHTWEIGHT TEAMS

Members still report to functional manager.

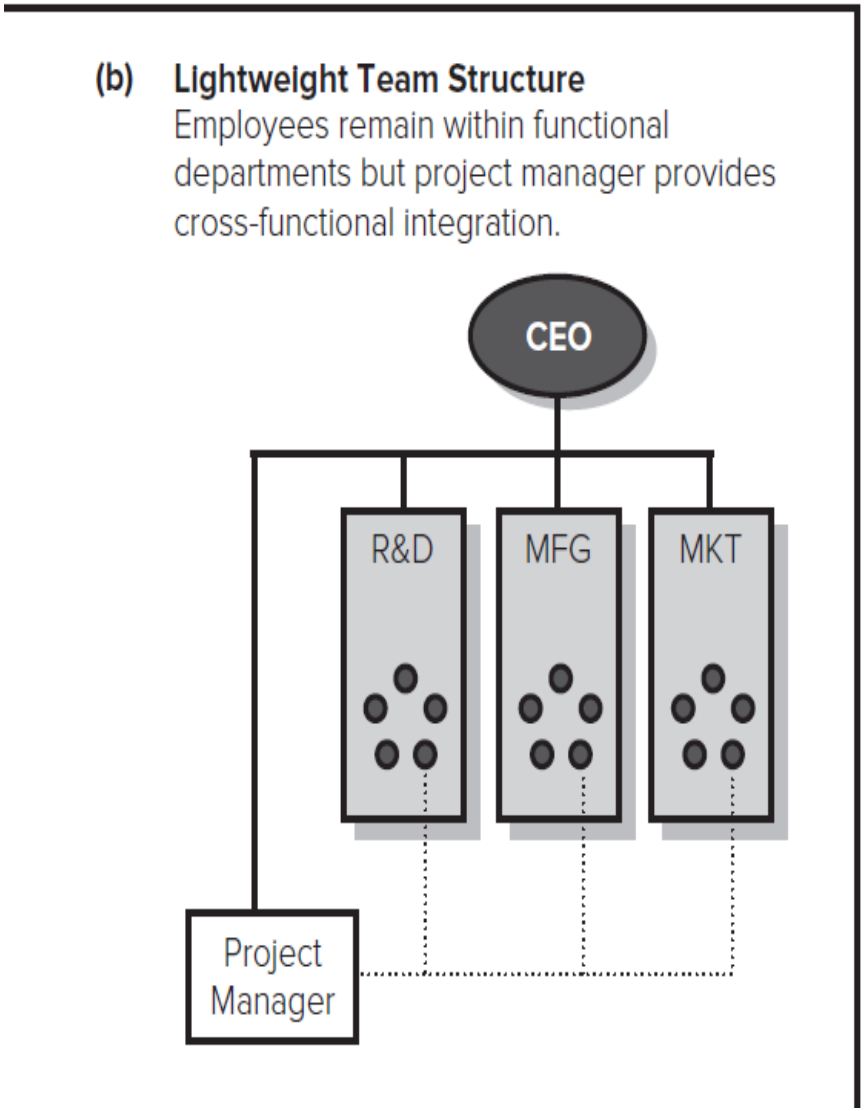
Temporary, and member may spend less than 25% of their time on project.

.Typically have a project manager and dedicated liaison personnel.

Manager is typically junior or middle management.

Likely to be appropriate for derivative projects.

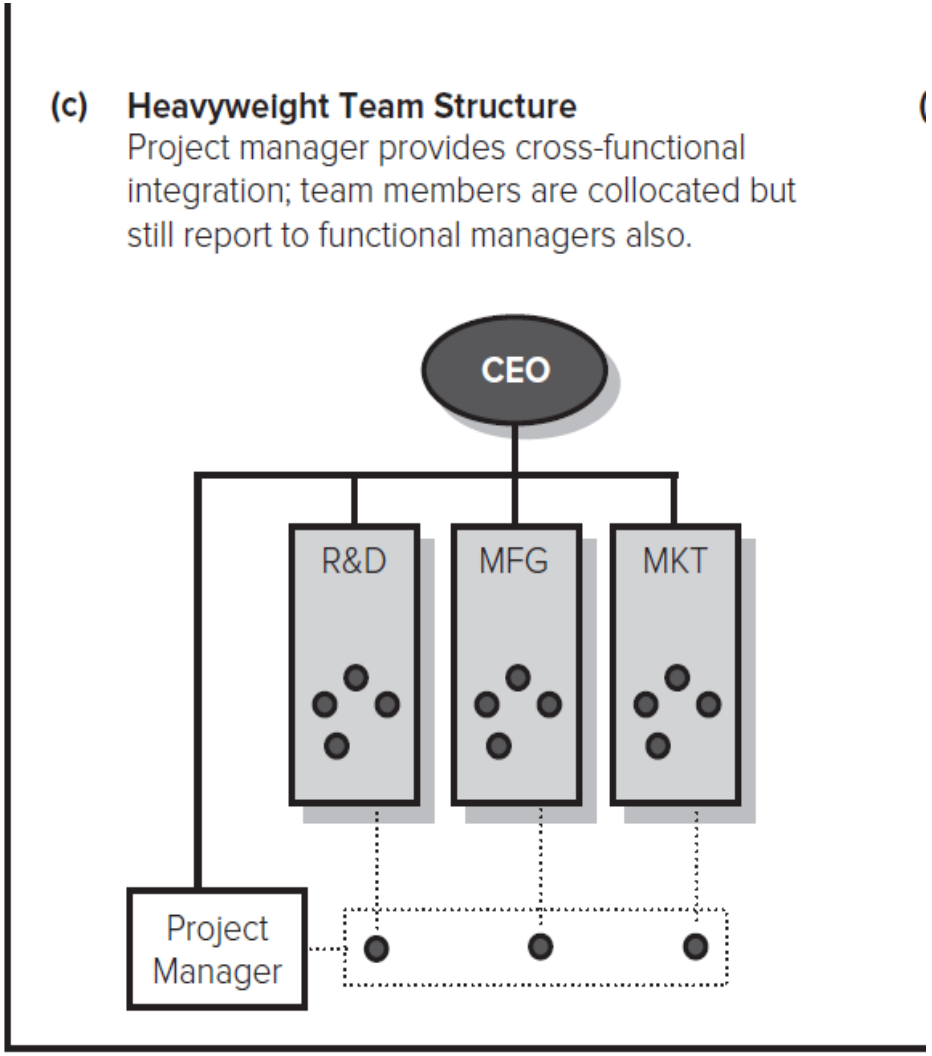
These teams experience slightly better team coordination **and likelihood of success over functional teams.**



Heavyweight Teams.

- Members are *collocated* with project manager.
- Manager is typically senior and has significant authority to command resources and evaluate members.
- Often still temporary, but core team members often dedicated full-time to project.
- Likely to be appropriate for platform projects.

The potential impact (e.g. promotions, raises, etc.) of the project manager on members' careers **creates commitment** to project.



AUTONOMOUS TEAMS

- Members collocated and dedicated full-time (and often permanently) to team.
- Project manager is typically very senior manager.
- Project manager is given full control over resources contributed from functional departments and has exclusive authority over evaluation and reward of members.

Autonomous teams may have own policies, procedures and reward systems that may be different from rest of firm.

Likely to be appropriate for breakthrough and major platform projects.

Can be difficult to fold back into the organization.

Potential for **conflict** between team and functional divisions **grows with the autonomy of team**.

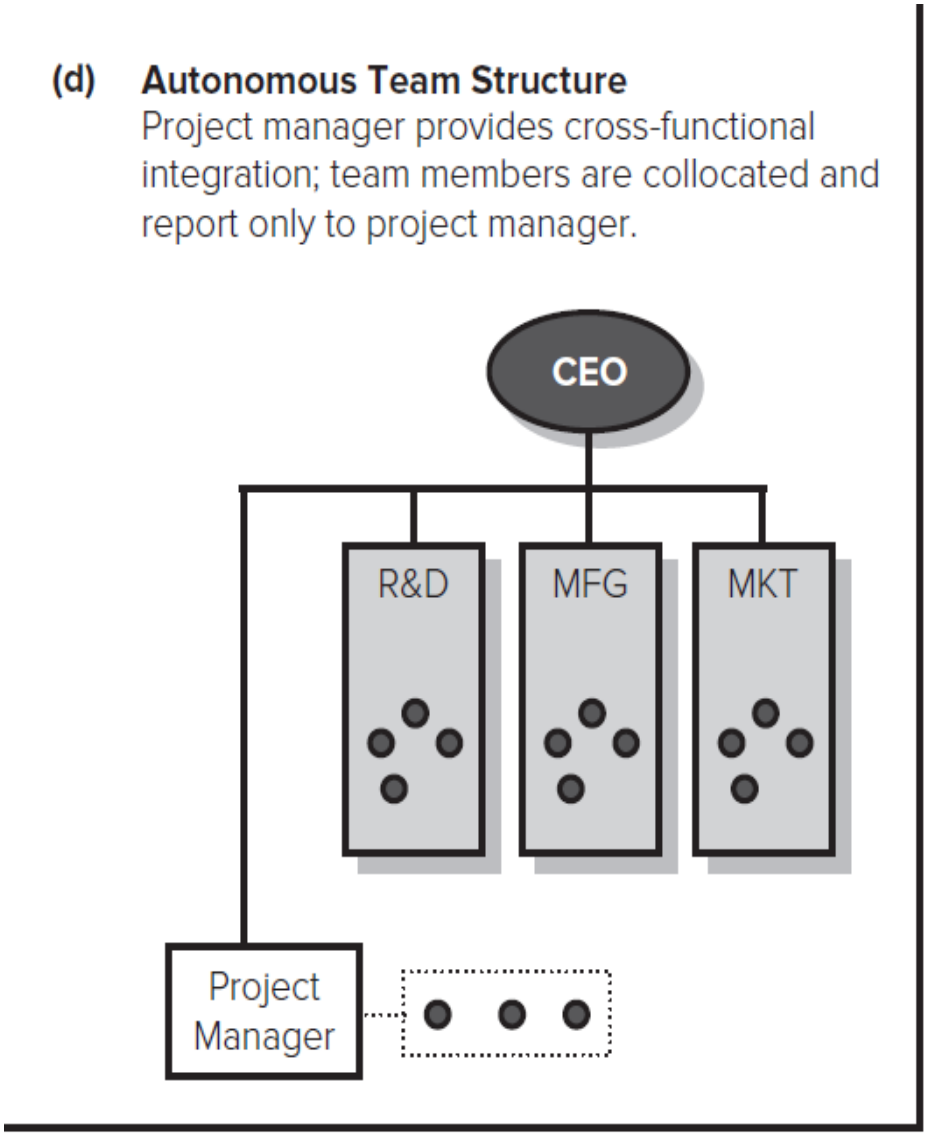


FIGURE 12.2
Summary of Characteristics of Team Types

Characteristics	Functional Team	Lightweight Team	Heavyweight Team	Autonomous Team
Project manager	None	Junior or middle manager	Senior manager	Senior manager
Power of project manager	NA	Low	High	Very high
Time spent on team activities	Up to 10%	Up to 25%	100%	100%
Location of team members	Functions	Functions	Collocated with project manager	Collocated with project manager
Length of commitment to team	Temporary	Temporary	Long-term but ultimately temporary	Permanent
Evaluation of team members	Functional heads	Functional heads	Project manager and functional heads	Project manager
Potential for conflict between team and functions	Low	Low	Moderate	High
Degree of cross-functional integration	Low	Moderate	High	High
Degree of fit with existing organizational practices	High	High	Moderate	Moderate-low
Appropriate for:	Some derivative projects	Derivative projects	Platform projects/ breakthrough projects	Platform projects/ breakthrough projects

Team **effectiveness is a function** of **how well suited leadership** and **administrative policies** are to team's structure and needs.

Team Leadership

- **Team leadership** needs **vary with the type of team** with autonomous teams having greatest need for project manager with strong leadership and managerial skills.
- Because of their direct relationship with team members, **project managers** can be **more closely related to team success than senior management or project champions.**

Team Leadership

- Team leader is responsible for directing team's activities, maintaining alignment with project goals, and communicating with senior management.
- **Team leaders impact team performance more directly than senior management or champions**.
- Different team types need different leader types:
  - **Lightweight teams** need **junior or middle manager**.
  - **Heavyweight and autonomous teams** need **senior manager** with high status, who are good at conflict resolution, and capable of influencing engineering, manufacturing, and marketing functions.

Team Administration

- Team administration **should be designed to ensure that team members have a clear focus and commitment to project (e.g.** project charter **or** mission statement**,** contract book **or** project plan**, etc.).**

Team Administration

Project charter encapsulates the project's mission and provides measurable goals. May also describe:

- Who is on team.
- Length of time members will be on team.
- Percentage of time members spend on team.
- Team budget.
- Reporting timeline.
- Key success criteria.

Team Administration

Contract book defines in detail the basic plan to achieve goals laid out in charter. It provides a tool for monitoring and evaluating the team's performance. Typically provides:

- Estimates of resources required.
- Development time schedule.
- Results that will be achieved.

- Team members sign contract book;

It helps to establish commitment and sense of ownership over project.

Managing Virtual Teams.

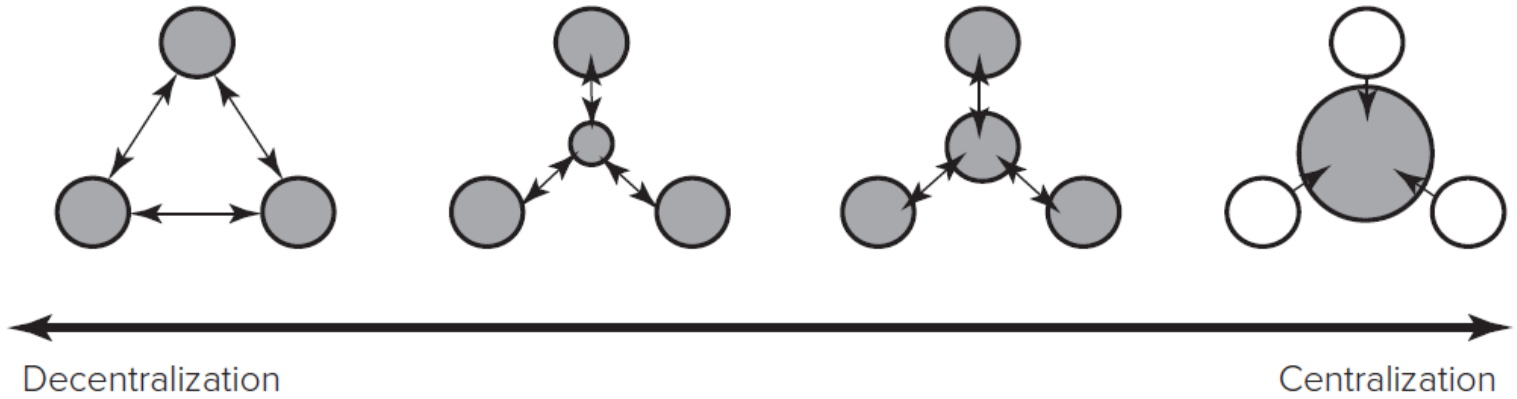
- In **virtual teams**, members may be a great distance from each other, but are still able to collaborate intensely via videoconferencing, groupware, email, and internet chat programs.
- **Enables people with special skills to be combined without disruption to their personal lives.**
- **However,** may be losses of communication due to lack of proximity and direct, frequent contact.
- Requires members who are comfortable with technology, have strong interpersonal skills and work ethic, and can work independently.

Virtual International R&D Teams

Gassman & von Zedwitz studied 37 technology-intensive multinationals and identified **four team types**.

They concluded that the **more radical** the innovation, the **greater the need for centralization** in the team structure.

Gassman and von Zedtwitz's types of virtual teams



Decentralized Self-Coordination

All R&D conducted by decentralized divisions that coordinate loosely with each other.

System Integrator as Coordinator

Most R&D activity conducted by decentralized divisions, but each coordinates with central integrator.

Core Team as System Architect

Core team takes lead role in R&D activities while also coordinating the R&D activities of the decentralized divisions.

Centralized Venture Team

R&D resources transferred to centralized venture team, which then conducts all R&D activities.

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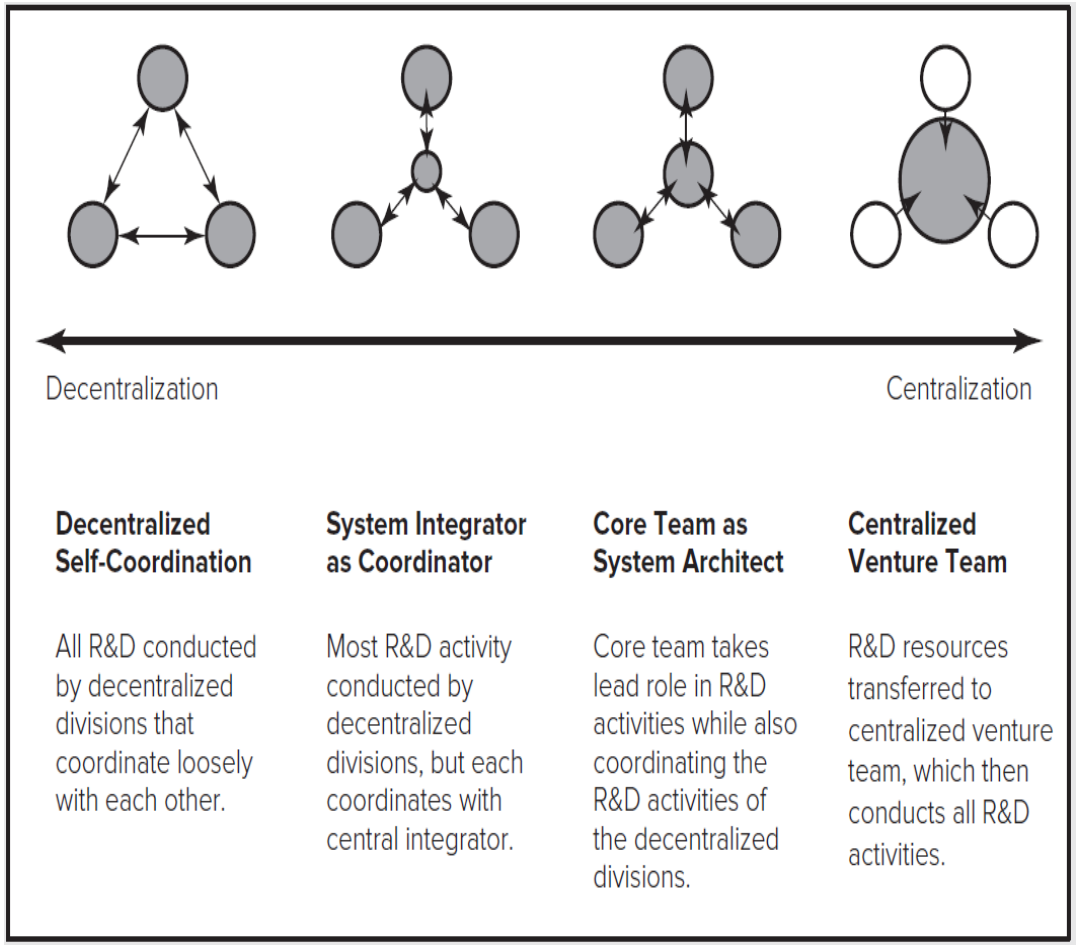
Gassman and von Zedtwitz's types of virtual teams



Decentralized self-coordinating teams **are best suited to modular innovation and are characterized by the** lack of a central authority **and** team communication via telephone, the internet, shared databases and groupware**.**

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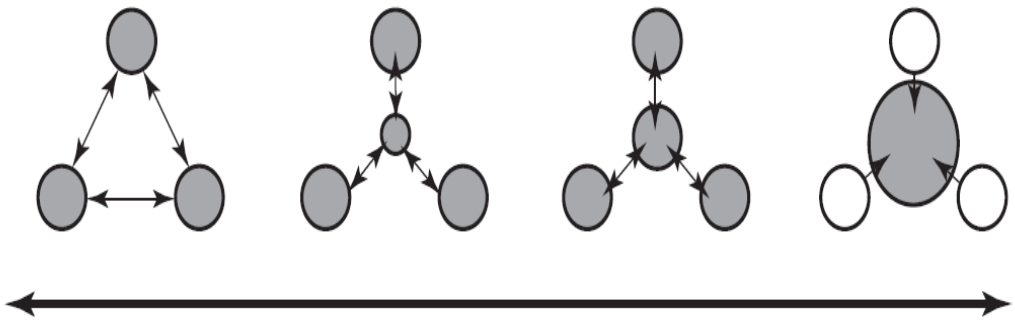
Gassman and von Zedtwitz's types of virtual teams



Decentralized Self-Coordination	System Integrator as Coordinator	Core Team as System Architect	Centralized Venture Team
All R&D conducted by decentralized divisions that coordinate loosely with each other.	Most R&D activity conducted by decentralized divisions, but each coordinates with central integrator.	Core team takes lead role in R&D activities while also coordinating the R&D activities of the decentralized divisions.	R&D resources transferred to centralized venture team, which then conducts all R&D activities.

System integrator as coordinator utilizes **one individual or office assumes responsibility for coordination,** for building common understanding, and providing **a central focus for project.**

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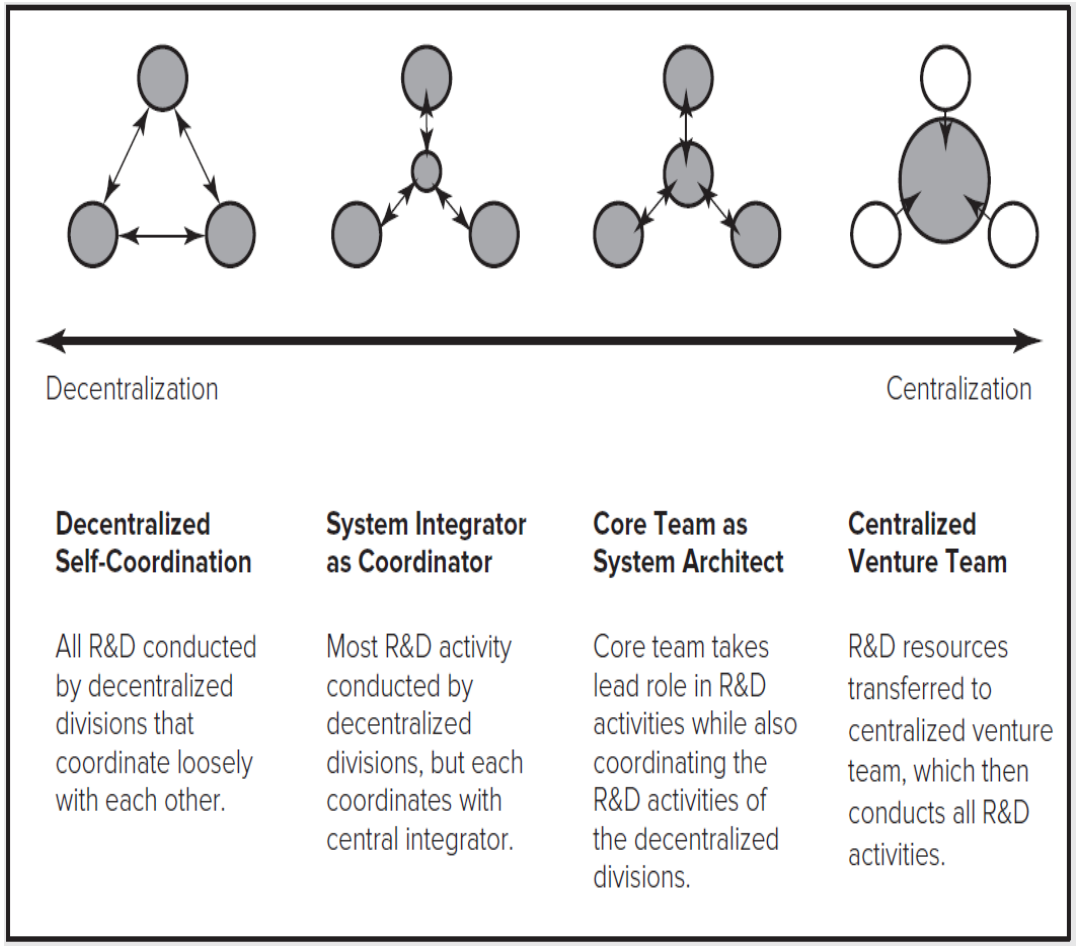
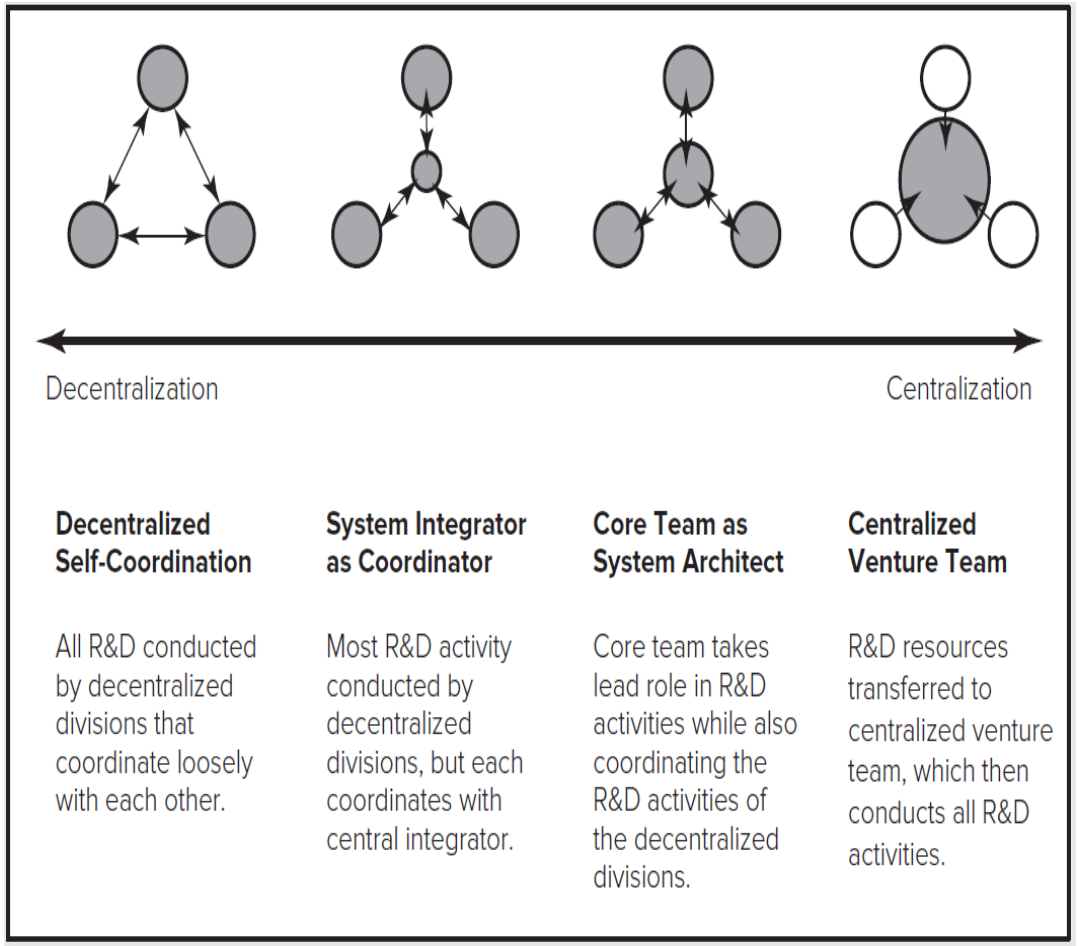
Gassman and von Zedtwitz's types of virtual teams



Core team as system architect is constructed of **key decision makers from decentralized R&D groups**, a **strong project manager**, and **possibly external customers or consultants** that **provide structure and oversight** throughout the project. This type of team is best suited to the development of **architectural innovation.**

Gassman and von Zedtwitz's types of virtual teams



Centralized venture teams are constructed of **R&D personnel and resources brought to central location** and are **assigned a senior project manager**. This type of team **maximizes integration, coordination and effective resource allocation** but is the most **expensive** type of team so it is usually used to develop **strategic innovations**.

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Discussion Questions

1. Why are the tradeoffs in choosing a team's size and level of diversity?
2. What are some of the ways that managers can ensure that a team reaps the advantages of diversity while not being thwarted by some of the challenges team diversity raises?
3. Can you identify an example of a development project, and what type of team you believed they used? Do you think this was the appropriate type of team given the nature of the project?
4. What are some of the advantages and disadvantages of co-location? Are there some types of projects for which “virtual teams” are inappropriate?