31st Annual **INCOSE** international symposium

virtual event

July 17 - 22, 2021

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Technical Leadership of Virtual and Remotely Distributed Teams

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Agenda

- Background: INCOSE Technical Leadership Institute – Cohort 5

- Introduction to Virtual and Remotely Distributed (VaRD) environments

- Input Factors Impacting Technical Leadership

- Similarities and Difference in Environments and Context

- Tuckman's Model of Forming Teams

- General Translation of Leadership Practices

- Effective Behaviors

- Potential Future Analysis

- Closing Remarks

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INCOSE Technical Leadership Institute

A development program for active INCOSE members seeking to improve their leadership skills in an open and collaborative environment.

- INCOSE has a growing pool of leaders to draw on and an enhanced international reputation for systems engineering leadership.

- Individual members become more capable leaders and join an international network of systems engineering leaders.

- Sponsoring organizations obtain non-proprietary, tuition free technical leadership training for future systems engineering leaders.
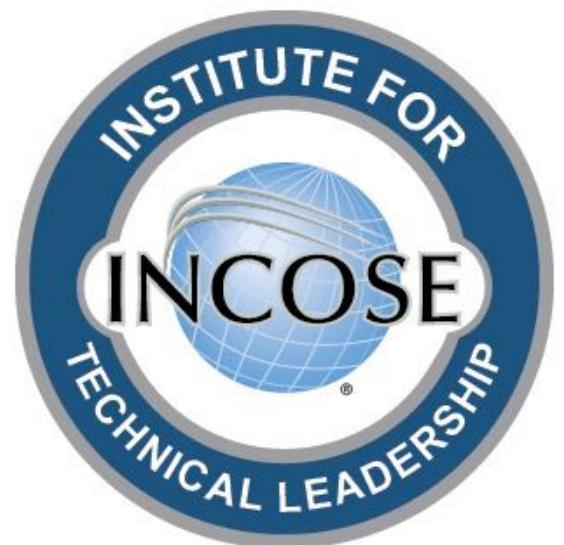
The Team

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A multi-cultural and geographically distributed team

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Introduction

- We live in a time of changing work environments.
    - Increasingly global teams (distributed teams)
    - Remote work (remote teams)
    - Virtual collaboration (virtual teams)
- Leadership is still necessary, regardless of the environment.
    - Leading of teams, projects, and initiatives
    - Leading others through influence

Here's the question: **With working environments changing to virtual and remotely distributed teams, how much do our leadership approaches need to change with them?**

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Input Factors Impacting Technical Leadership

- **Uncontrollable or unpredictable events**

  – Factors that are beyond control or unforeseen

  – Shapes leadership in the face of unexpected adversity

- **Organizational culture**

  – Shared system of beliefs, values, expectations

  – Influences the effectiveness of leadership styles

- **Human factors**

  – Effects of human behaviors on performance

  – Non-technical, "soft skills" that involves emotional and social intelligence

Similarities and Differences in Environments and Context

	In-Person	VaRD
Team Selection	Selected based on functional skills: • Leadership • Communication (written and oral) • Soft skills	Selected based on knowledge of technology: • Ability to learn new information and communication technology (ICT) • Ability to collaborate across functional and cultural boundaries • Exceptional time management

	In-Person	VaRD
Organization Structure	• Clear reporting lines • Hierarchical Organization Charts	• Support a global organization structure • May have weak authorities and fewer hierarchies
	Communication and Collaboration are key in both	
	Leading by example are true for both	
	Holding regular check-in (status meetings) are true for both)	

	In-Person	VaRD
Availability of ICTs	• Employees work in central location • Team members have access to information directly from co-workers	• Companies cannot control where employees work • Building a shared repository to provide important information to team members is critical
	Controlling in-house facilities and physical technologies teams (i.e., company issued computers, smartphones, and wireless access cards)	

Similarities and Differences in Environments and Context

|	In-Person	VaRD
Leadership or Management Style	• Easier for leads to interact and participate in the day-to-day team activities • Teams' activities are visible to leaders since all are in the same location	• Leads cannot control day-to-day activities • Cannot monitor teams' activities easily • Will need to delegate more • Will need to lead through influence more than directly • More communication with clear delivery is critical
	In-Person	**VaRD**
Knowledge Exchange and Decision making	• Information exchange happens during informative discussions • Building a shared repository to provide important information to all team members	• Members have limited or no informal access to data • More frequent updated on project status • Building a shared repository to provide important information to all team members
	In-Person	**VaRD**
Relationship Building	• Tend to build close ties	• Interactions tend to be more task focus • Lack of verbal cues and gestures • Setting does not allow for personal touch in communication

Similarities and Differences in Environments and Context

	In-Person	**VaRD**
Psychological Contract	• Open and frequent communications (daily basis) that favorites close social ties with each other • Teams build relationships with each other when they interact face-to-face	• More fragile, larger misunderstanding or gaps in communication happen which result in violation of psychological contract • Difficulties in building trust, cohesion, and commitment among its members

Tuckman's Model of Forming Teams

All teams go through the five stages of Tuckman's team development model including VaRD. It is hard for a team to grow to the point where the members are functioning effectively and delivering high quality products if they do not go through these stages. It is possible as some point for a team to revert back if a new team member arrives on the project or if a team member leaves, until the new member is settled.

Five Stages of Team Development

Adjourning

Performing

Norming

Storming

Forming
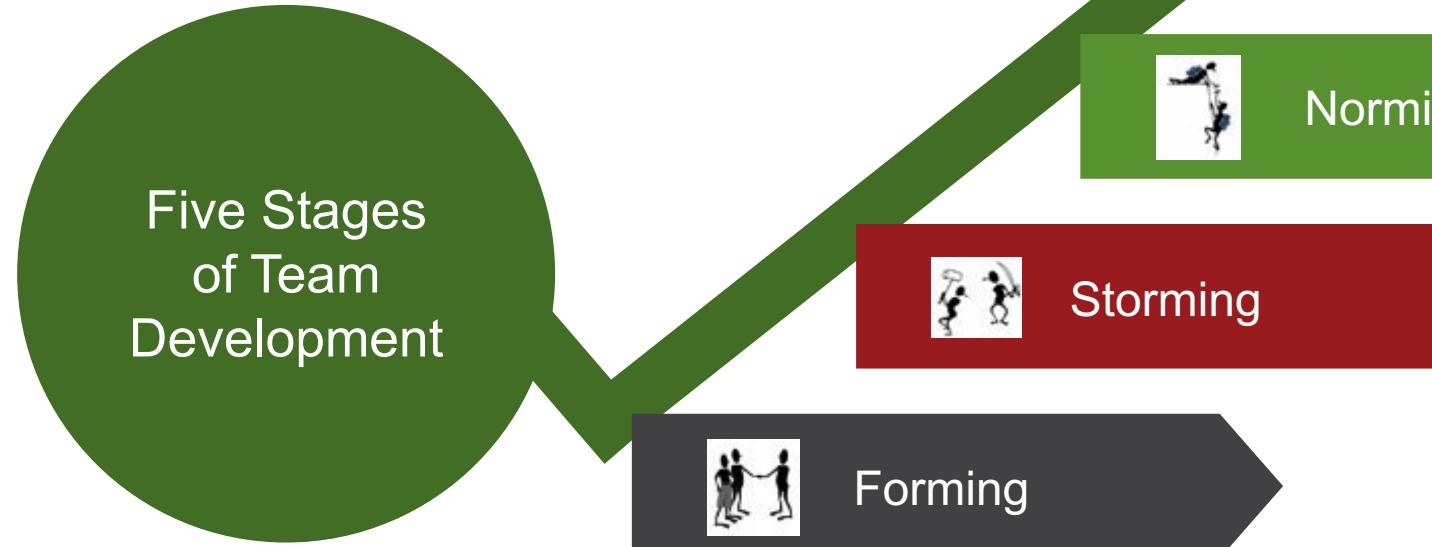
Leaders need to recognize that for a VaRD team, they might go through a more complex development process, because they solely rely on electronic communication and collaboration technology to facilitate interactions. Cultural boundaries and time zone differences add to its complex nature. With that said the model is applied the same way as if it were in a in-person team.

General Translation of Leadership Practices

MODEL THE WAY

Establish principles and standards on how people should cooperate and pursue goals.

ENCOURAGE THE HEART

Keep determination alive and recognize people contributions.

INSPIRE A SHARED VISION

Create an appealing image of the destination, so people envisage future possibilities.

ENABLE OTHERS TO ACT

Foster collaboration, build trust, and actively involve people.

CHALLENGE THE PROCESS

Adapt to emergent situations, pioneer new solutions, and keep people confidence high.

Credits: Kouzes and Posner, "The Leadership Challenge", 2012

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Tailoring of Leadership Practices

		In-person	VaRD
	Model the way	Lead by example, acting as a subject matter expert.	Maximize people inclusion and comfort through social and communication abilities.
	Inspire a shared vision	Vision building is facilitated by direct feedback and continuous interaction between people.	Inspire through excellent verbal and graphical communication and seek for indirect feedback.
	Challenge the process	Easier decision-making process and change implementation, but less creative environment.	Diversity boosts people creativity, but decision-making processes and changes are more difficult.
	Enable others to act	Plenty of opportunities to build trust and empathy through human contact and direct support.	Engage and involve people through reliable ICT infrastructures and knowledge sharing systems.
	Encourage the heart	Easy to celebrate success and spend an enjoyable moment together.	Celebrate through posts in social networks, videos, and newsletters, which have visibility.

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Effective Behaviors

People matter.
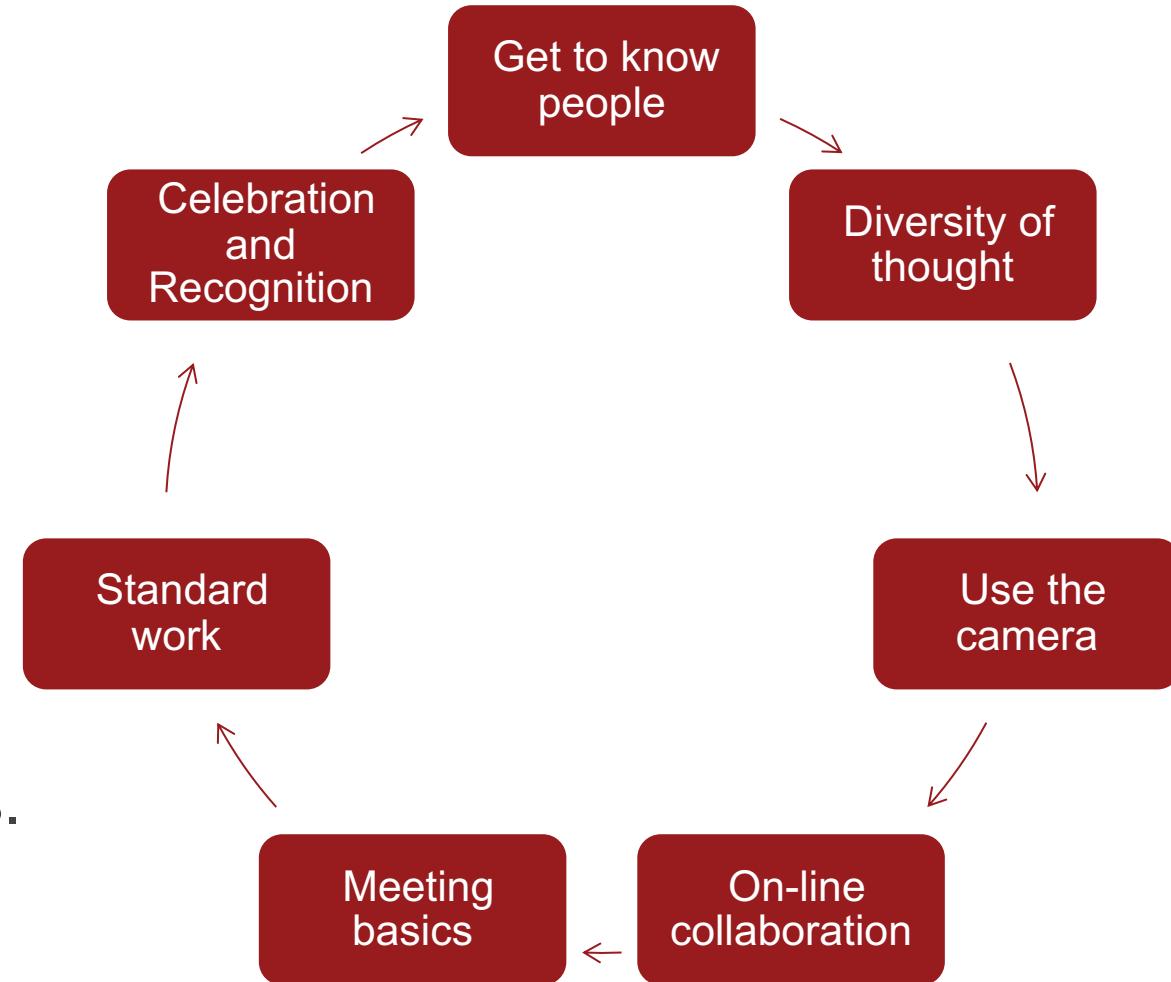
Stick to fundamentals.

Potential Future Analysis

Leadership vs. Management

Effects of different organizational structures

Virtual and remotely distributed team development

Resolving conflicts in VaRD environments

Establishing or changing a virtual culture

Quantitative studies
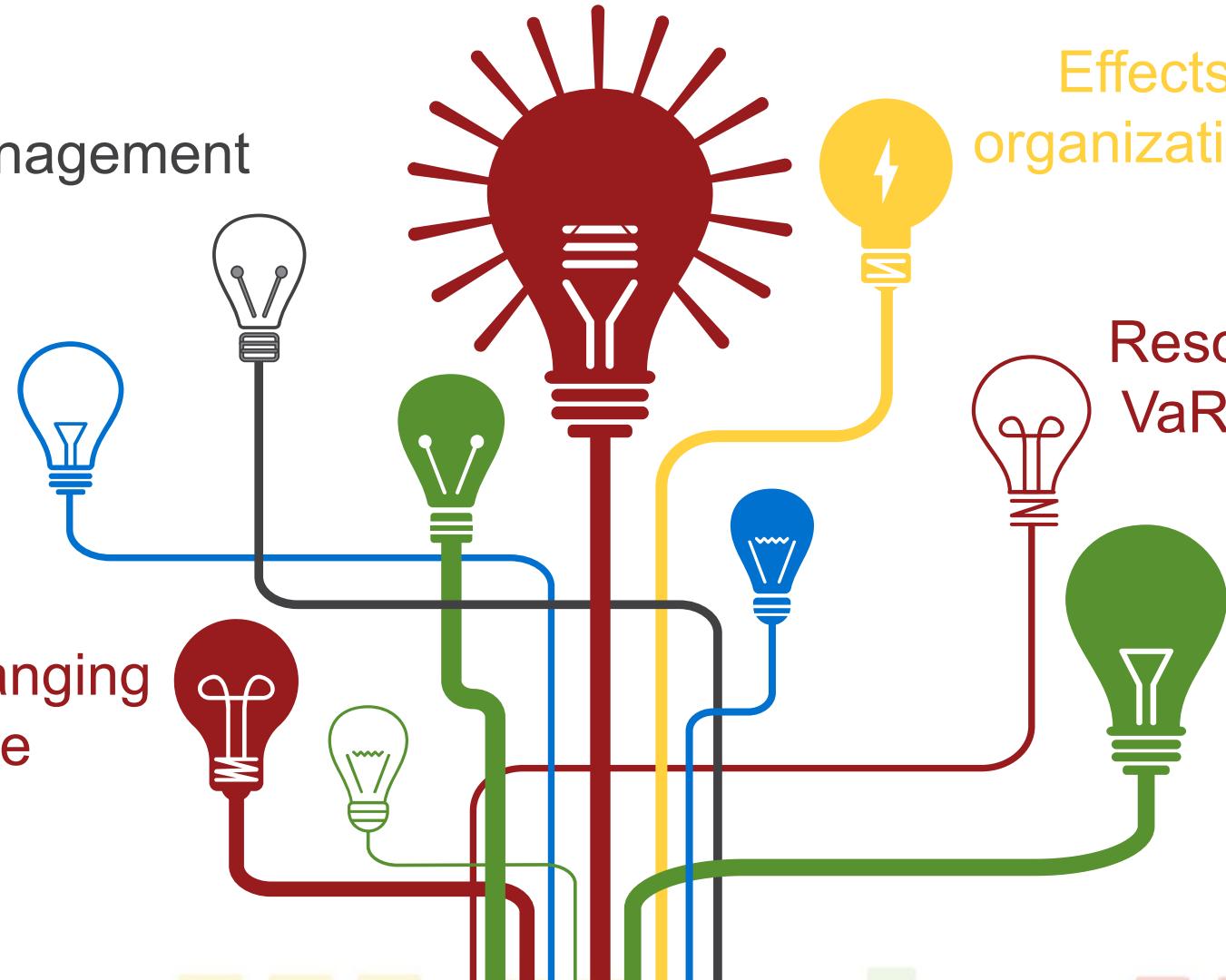
Conclusions

- There are challenges presented with VaRD environments challenges, especially with so many organizations having to adopt such environments suddenly.

- Leaders in systems engineering must approach and address these challenges to meet the needs of their organizations and teams.

- Although the tools and techniques may change in a VaRD environment, core leadership principles do not change.

- VaRD environments present an opportunity to add new (tailored) tools to the leadership toolbox.

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