# DevOps Foundation

## Lesson 6: DevOps Culture

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## Welcome to your Study Guide

This document is supplementary to the information available to you online, and should be used in conjunction with the videos, quizzes and exercises.

## Study Guide Icons

| | | |
|---|---|---|
| | **TIP** | This will remind you of something you need to take note of, or give you some exam guidance. |
| | **Definition** | Key concept or term that you need to understand and remember. |
| | **Role** | Job title or responsibility. |

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## DevOps Culture

In this lesson we considered some cultural considerations for DevOps, including:

- Understanding organizational culture
- Cultural debt
- DevOps culture
- Managing culture change

Resistance to change and new ways of working has been the downfall of many process improvement initiatives so it's important to have tools for success.

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## Understanding Organisational Culture

Organizational culture is the behavior of humans within an organization and the meaning people attach to those behaviors.

It's essential we understand our culture when we plan to make changes, because we need to understand how significant the impact of the change will be.

Culture can enable continuous improvement, or it can be a source of resistance.

Culture is 'the way we do things' in an organization, and changing the way we do things can leave people feeling scared, uncomfortable and angry.



Think about your own organization culture.  If you were to start bringing in DevOps practices tomorrow, how much of a change would that be?  Would you need to address any cultural issues first?

Every organization has its own unique culture.  Culture includes the organization's vision, values, norms, systems, symbols, languages, assumptions, beliefs and habits.

Culture is expressed in many ways, including:

- How an organization conducts business
- How an organization treats its employees, customers and the wider community
- Freedoms allowed in decision making, developing new ideas and personal expression
- How power and information flow through the organization's hierarchy
- How committed employees are towards collective objectives.

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## Cultural Debt

A key concept for cultural analysis is the idea of cultural debt.  This happens when cultural considerations are disregarded or deferred in favor of growth and innovation – often the net effect of IT's organizational silos.

For example, an organization might be divided into teams based on skills or applications.  Each team is managed differently, has its own practices and tools and does not interface often with other teams.  Communicating and collaborating with these silos is often difficult and frustrating, resulting in a lack of trust and unnecessary bottlenecks.   This cultural debt will, at some point, need to be addressed.

DevOps can pay down cultural debt by focusing on creating a trust relationship that includes human and technical interactions.

Cultural debt happens when:

- Silos become impenetrable (fiefdoms)
- Companies hire the wrong people
- Employees don't feel empowered
- Employees don't feel their contributions matter
- Peoples' contributions aren't acknowledged
- People aren't given the time or resources needed to make improvements
- Feedback loops are negative or non-existent
- Information is hidden

For IT, cultural debt will have severe consequences.  Projects and flow might suffer because of extensive silos, workflow constraints and a lack of collaboration.  Communication will be poor, and might lead to miscommunication and errors.

Ultimately, IT will see project delays, waste, and additional cost – the opposite of the outcomes we want to achieve.

| | **Quote** |
|---|---|
|  | "Culture eats strategy for breakfast" |
| | **Peter Drucker** |

Culture can change, but it takes time, patience and vision.

## IT is a Community

IT is a community, or society.  Like any society, it's multi-cultural and prone to fragmentation.

IT has cultural groupings, which might be aligned to a tool, a methodology, or a framework.

Each group has its loyal fans and its detractors.  Really, we need to try and blend these groups and take a more holistic view.  For example, just because we use ITIL® doesn't mean we can't use Agile or Lean practices too.

Each IT group will have its own messages.  As groups get bigger, they might even start arguing internally and split to create smaller groups.  IT staff might have to choose to ignore all the noise, or listen only to messages from trusted sources.

Ultimately, each organization needs to understand and adapt the tools, methods and frameworks that will help them meet their goals and deliver value to their customers.

| | **Quote**<br><br>"Tools and processes are a reflection of your cultural choices"<br><br>**Sascha Bates** |
|---|---|

Organizations that are process bound and bureaucratic in nature will choose process heavy, bureaucratic ways of working.  Organizations that are already open and high-trust are likely to embrace high trust ways of working.

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## DevOps Culture

Characteristics of a DevOps culture include:

- Shared vision, goals and incentives
- Open, honest, two-way  communication
- Collaboration
- Pride of workmanship
- Respect
- Trust
- Transparency
- Continuous improvement
    - Experimentation
    - Intelligent risk taking
    - Learning
    - Practicing
- Data-driven
- Safe
- Reflection
- Recognition


Shared goals, visions and incentives are essential for DevOps to help break down silos and improve integration and collaboration.

The culture needs to create a safe environment with high trust and a learning culture.  People need to feel free to speak up – for example during blameless post-mortems that focus on what went wrong, not who messed up.

Some companies reward teams that support learning and improvement.  This sends a strong cultural message about the sort of behavior that is welcomed and encouraged.

Real culture change takes time.  It must be incremental and performed at a realistic pace.
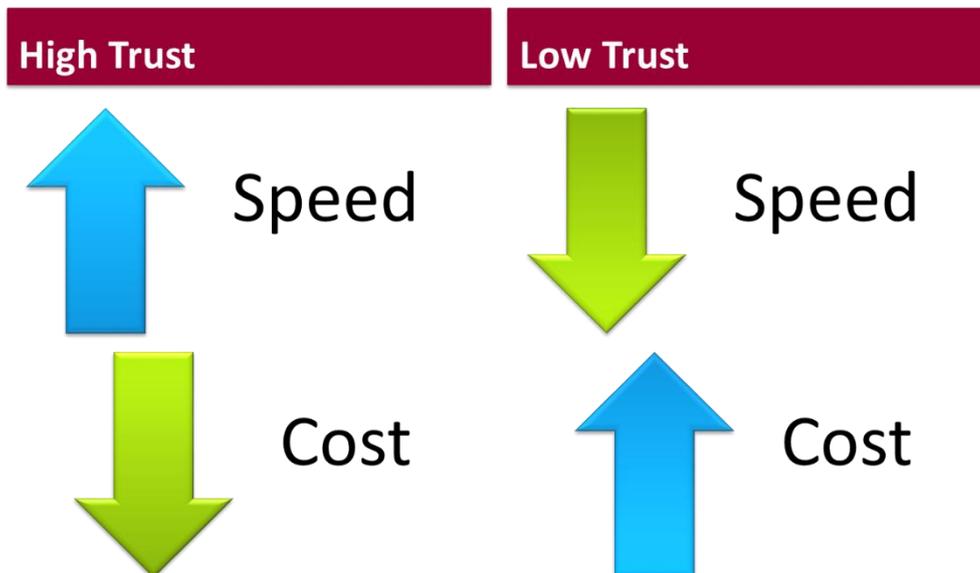
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Here are some examples of where we want to move towards:

| From | To |
|------|-----|
| ▪ IT focus (inside-out)<br>▪ Silos<br>▪ Command and control<br>▪ Task-oriented<br>▪ Blame<br>▪ Reactive<br>▪ Content<br>▪ Resistant<br>▪ Low trust | ▪ Customer focus (outside-in)<br>▪ Cross-functional teams<br>▪ Collaborative<br>▪ Outcome-oriented<br>▪ Responsibility<br>▪ Proactive<br>▪ Courageous<br>▪ Flexible<br>▪ High trust |

## High Trust and Low Trust

The diagram below compares and contrasts the low trust and high trust organization.

Where would your organization sit?

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The table below shows some extracts from a study that looked at how culture affected the performance of a medical unit.  The concepts, however, apply to any type of organization.

You don't need to remember the characteristics of each type of organization for your exam, but you will need to be able to recognize the characteristics of a high trust culture.

| Pathological | Bureaucratic | Generative |
|---|---|---|
| Information is hidden | Information may be ignored | Information is actively sought |
| Messengers are 'shot' | Messengers are isolated | Messengers are trained |
| Responsibilities are shirked | Responsibility is compartmentalized | Responsibilities are shared |
| Bridging is discouraged | Bridging is allowed but discouraged | Bridging is rewarded |
| Failure is covered up | Organization is just and merciful | Failure causes enquiry |
| Novelty is crushed | Novelty creates problems | Novelty is implemented |

Source: Westrum, *A Typology of Organizational Cultures*

In the context of DevOps, there are a number of techniques we can use to create and maintain a high trust culture.

These include:

- Encouraging and creating boundary spanning teams
- Making quality, availability and security everyone's responsibility, not just Ops
- Holding blameless post mortems when incidents and outages occur to develop effective counter measures and encourage learning
- Maximizing everyone's creativity to find novel solutions to problems

Creating a learning culture will be essential to support growth and innovation. Many organizations think of learning as part of training – something that staff

might do for a few weeks a year, or something that gets cancelled when budgets are tight.

Learning needs to become part of daily business as usual – or the organization will fail to grow and adapt.  To create a learning culture, leaders and managers within an organization must value learning and 'walk the talk' to show how they expect staff to behave.

Making learning part of our culture might include:

- Incorporate learning into processes
- Encourage daily learning and knowledge sharing
- Use technology to accelerate learning
- Make work educational
    - Experimentation
    - Problem solving
    - Demonstrations
- Allow and use mistakes as sources of learning
- Make the results of learning visible



## Quote

"An organization's ability to learn, and translate that learning into action rapidly, is the greatest competitive advantage"

**Jack Welsh**

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## Managing Culture Change

Culture change is **never** easy.

To be successful, we must accept that:

- Change almost always takes longer and costs more than expected
- Stakeholder involvement is critical
- People who are engaged with the change process and change decisions are far more likely to accept the change

To be successful when introducing cultural change, it's a good idea to introduce some organizational change management practices. These will provide structure, preparation and motivation to give people the education they need to embrace and support change.

Remember, people are less likely to resist any idea if they feel some sense of ownership or involvement.

| | |
|---|---|
|  | ## Quote<br><br>"You never change things by fighting the existing reality. To change something, build a new model which makes the existing model obsolete"<br><br>**Buckminster Fuller** |

For an organization to adopt DevOps successfully it needs to have a culture that enables and encourages collaboration. The culture needs to be blame free, to encourage people to make mistakes and speak their minds.

People will adapt to the values and practices of the organizational culture, but it will take time. Make changes incrementally (think about the plan-do-check-act approach we studied earlier) and accept that there will be some back-sliding along the way.

Successful DevOps is all about the people and the culture. We talked about communication, collaboration and integration – these are all related to people. DevOps is about how people think, interact, behave, work, and perceive themselves and their colleagues.

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One person can't drive DevOps up through the organization. It takes a team effort, led by management, with an appetite to change the culture.

## Reactions to Change

This table shows different reactions to change and what management can do in each situation.

| Willingness to change | Management action |
| --- | --- |
| 13.5% of workers are early adopters and about 2.5% of early adopters are innovators who initiate change | Engage forward thinkers and empower them to serve as change agents |
| 68% of workers will change with encouragement and proof that the change is worth the pain and effort | Provide a clear vision, training and proof of concept |
| 16% of workers are naysayers who will view the change negatively and may never accept the change<br>Source: Rogers. *Diffusion of Innovations* | Focus on the upper 84% |

A minimum of staff are typically either early adopters who embrace change, or naysayers who are not comfortable with change at all.

Management need to encourage and reward their early adopters, to empower them to be change agents. They might be given responsibility for carrying out part of a plan, to get them involved and keep them excited.

Management time is not well spent trying to change the mind of the naysayers, as they can become even more entrenched in their ideas. The naysayers will eventually face a choice to become part of the new culture or leave.

The majority of staff are fairly neutral about change. With the right vision and training, they will accept the change as being worthwhile and eventually normal.

To support cultural change, we need to empower new behaviors. Many of our activities will be aimed at engaging and educating existing staff.

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According to a research report titled "What Smart Businesses know about DevOps", over 70% of DevOps leaders are focused on training their existing staff, with only 50% hiring new resources.

Our existing staff will already have good knowledge of the business, current services and strategy.  DevOps can change how they work together to improve performance and flow.

Sharing between peers, organizations and industries is a crucial factor in the growth and acceptance of DevOps.  New behaviors could be empowered by:

- Improving communication and collaboration practices and shared tools
- Creating a common vocabulary
- Job shadowing
- Cross-skilling
- Team building
- Communities of practice
- Internal DevOps Days
- Game days (hackathons)
- Social-media style idea sharing and problem solving

Cultural change is very difficult to drive from the bottom up without management commitment.  Really, it needs to come from the top down and so managers will play an important role.

Soft skills and emotional intelligence are essential.  To introduce self-organizing teams, managers need to focus on coaching and leading, rather than dictating to people what will happen.  This can be a large cultural shift for organizations with a command and control type structure.
Managers need skills including:

- Coaching
- Team building
- Listening
- Dealing with conflict
- Negotiation
- Delegation

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## Change Fatigue

| | **Change Fatigue** | Change fatigue is a general sense of apathy or passive resignation towards organizational changes, by both individuals and teams. |
|---|---|---|

Change fatigue can mean people feel cut off from the organization and can't commit to accepting a change.  It can happen when there is too much change, too quickly, making people feel confused and helpless.

People might not understand how changes are connected, how they support business goals or what they mean for them.  They need to understand 'What's in it for me?' – the WIIFM factor.

To help overcome change fatigue, accept that some level of resistance is normal and try not to attempt too much change too quickly.  Communicate the big picture – why is the change happening? How are changes connected? How do they support business goals?  Sometimes staff can't see how a small change that affects them is part of something much larger.

Ensure each change initiative has an intended outcome, and that it's communicated.  Empower people to contribute, and celebrate success – no matter how small.  Finally, create visible feedback and improvement loops so everyone is engaged.

| | **Quote**<br><br>"You can't directly change culture.  But you can change behavior, and behavior becomes culture"<br><br>**Lloyd Taylor, a VP of Infrastructure at Ngmoco** |
|---|---|