

CS2101
Effective Communication
for computing professionals

Principles of Communication

The left half of the slide features a minimalist abstract design composed of large, light-colored, faceted 3D cubes and rectangular prisms. These shapes are arranged in a loose, overlapping composition against a dark gray background. The lighting is soft, highlighting the geometric forms.

Welcome to CS2101!

In this session, you would:

- ❖ Get to know each other
- ❖ Learn more about this course
- ❖ Identify the elements in the Communication Process
- ❖ Recognize the importance of the Context, Audience and Purpose (i.e. Strategic Needs analysis)
- ❖ Demonstrate an understanding of the Competing Value Framework

Round-Robin Discussions

- ❖ You will be placed in pairs/threes in breakout rooms for each question.
- ❖ Please get to know each other, discuss the question and return to the main session when prompted.

1. Please share one interesting piece of information about yourself.

2. What communication skills do you think are important at the workplace?

The MYTH of

I took Computing because I don't like talking to people

Just how important are communication skills for
computing professionals anyway?

Communication is Key to Software Engineering

Published on January 31, 2015 | Featured in: [Software Engineering](#)



Donnie Flood [Follow](#)

Advising and Exploring New Ideas



102



11



6

Communication is Key

Great communication is the most important characteristic for success as a software engineer. For most people this may sound counterintuitive. Don't engineers spend all day coding? Actually, a big part of the day-to-day job of software engineering is not spent knee-deep in code but rather working with a variety of folks across the company.

It turns out software engineers, like other knowledge-workers, spend a ton of time collaborating across IM, email, reading designs, reviewing code and going to meetings. Our job often involves working across many parts of the company communicating with product management, account management, support, operations, sales, customers and of course with our peers and managers. As their career develops, software engineers end up spending most of their time communicating rather than actually coding. Ask any engineering manager, VP or CTO and most will tell you that their job is mostly about communication. Of course, managers need to communicate well but this is also true for individual contributors (IC). All of the senior IC engineers (Staff, Principal, Fellows, etc) I've ever met spend a ton of time communicating.



Jon Cairns [Follow](#)

Software developer @intellum. Loves Ruby, Rust, Python, remote working and building exciting things...

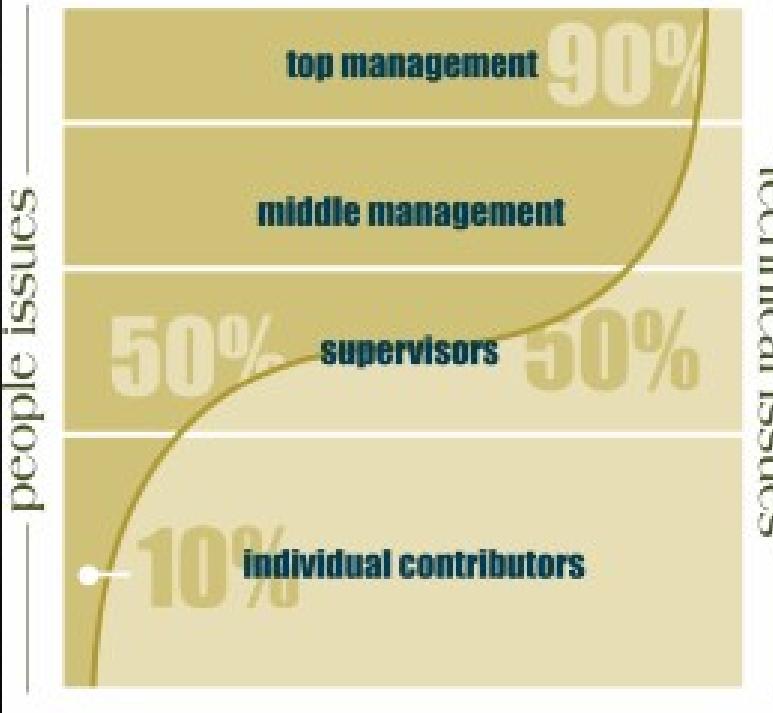
Oct 21, 2015 · 10 min read

Communication: how to be a better software developer

The bigger issue

However, particular communities of software developers have become aware of a far bigger issue than that of pure coding skill. It's an issue that's often neglected, difficult to quantify, somewhat intangible but equally, if not more, important to the success of teams, projects and individuals in software. It's the issue of relating to people or, in a word, communication. If you possess the ability to work well with others, to be able to lead and to follow when required and to communicate your ideas clearly and empathetically, then you possess something that is far more valuable than programming knowledge or experience.

the Skills Curve



3. What do you know about this course?

CS2101 Learning Outcomes

CS2101 Learning Outcomes

By the end of the module, you will be able to

1. apply the principles of interpersonal and intercultural communication in working with others in a team,
2. write effective reader-centred professional and technical documents,
3. adopt a reflective attitude towards your learning, project development and interaction with others,
4. make effective oral presentations to technical and non-technical audiences for different purposes,
5. analyse, evaluate and respond appropriately to the ideas of others,
6. demonstrate an understanding of the impact of cultural, societal and environmental issues and concerns on complex computer engineering solutions and communication
7. demonstrate knowledge of the need for sustainable development in complex computer engineering solutions

Note: 6 & 7 are required by the Computer Engineering Department

4. What are the main topics covered in this course?

Strategic
Needs Analysis

Q&A:
Thinking on
your feet

Tech portfolios

Team
development /
Team meetings

General
Presentations

User guides
/Developer
guides

Product
Demos &
Pitches

Progress
reports

Critical
reflections

Weeks 1 - 6

Strategic
Needs Analysis

Q&A:
Thinking on
your feet

Tech portfolios

Team
development /
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General
Presentations

User guides
/Developer
guides

Product
Demos &
Pitches

Progress
reports

Critical
reflections

Weeks 7-13



- ❖ CS2101 is **NOT** a tutorial to coach you for CS2103T/CS2113T submission / presentations
- ❖ CS2101 is a **separate module** from CS2103T/CS2113T, with different submission requirements (*e.g. software demo different audience, different purpose*) and separate deadlines (*e.g. UGDG*).
- ❖ CS2101 uses your technical project work in CS2103T/CS2113T to provide an authentic and meaningful context for your communication skills lessons so that you may learn to articulate your technical work, knowledge and thoughts to non-technical and mixed audiences.

Week 5 Session 1	7- 8 Feb	CA2 Oral Presentation 1 Crafting a Professional Resume and Cover Letter (20 mins OP + 10 mins Q&A)	OP1 20%	Peer feedback for OP1
Week 5 Session 2	10-11 Feb	CA2 Oral Presentation 1 Preparing for an Interview (20 mins OP + 10 mins Q&A)		
Week 6 Session 1	14-15 Feb	CA2 Oral Presentation 1 Building credibility at the workplace (20 mins OP + 10 mins Q&A)		
Week 6 Session 2	17-18 Feb	CA2 Oral Presentation 1 Managing conflict and negotiation (20 mins OP + 10 mins Q&A)		



Catalog ➔ Communication Courses

Intercultural Communication at Work – Land the job and do it well

Leveraging a holistic understanding of cultural and diversity quotient in resume writing, interview skills, skills for teamwork, conflict management and presentation



Syllabus

Topics

1. Crafting a professional resume, cover letter and LinkedIn profile
2. Preparing for an interview
3. Building credibility in a diverse and evolving workplace
4. Working in teams, managing conflict and negotiation
5. Presenting persuasively in the workplace



Enroll

Starts Dec 27

5. What activities/ assessments
are there?

Learning activities and assessments

CA1 Team Meeting	10%
CA2 Oral Presentation 1	20%
CA3 Oral Presentation 2 (Product demo and Product pitches)	20%
CA4 User guide	20%
CA5 Critical reflection essay	15%
Class participation <ul style="list-style-type: none">• Agenda• OP1 oral peer feedback• Recess Week reflection• Team progress report• Team UGDG written peer feedback• Overall participation in discussion and attitude during the semester	15%

Class Participation

CA1 Team Meeting

CA2 Oral Presentation 1

CA3 Oral Presentation 2 (Product demo and Product pitches)

CA4 User guide (This document will also be submitted to CS21037 (S113T) 20%

CA5 Critical reflection essay 15%

Class participation

- Agenda
- OP1 oral peer feedback
- Recess Week reflection
- Team progress report
- Team UGDG written peer feedback
- Overall participation in discussion and attitude during the semester

1-5 marks for each submission
depending on the quality of the work

(30% of Class Participation mark)

Class Participation

This includes your in-class behaviours and attitude. For example:

- how active a class participant you are
- how well you conduct yourself during in-class pair/group discussions
- how well you interact with your peers and tutor
- how well you work with your team and resolve conflicts that arise
- how well you respond to peer and tutor feedback
- how helpful you are to your peers and tutors

(70% of Class Participation mark)

There are penalties for:

- absence without valid reason
- late-coming (more than 15 mins, without valid reason)

- Overall participation in discussion and attitude during the semester
- Team UG written peer feedback
- Team projects
- Recess Work

15%

6. How many project groups are there? What are they?

OP1 Team

- 1st half of semester
- General presentations

CS2103T/ CS2113T Project Team

- 2nd half of semester
- User guide/
Developer guide
- Product demo &
pitch
- Progress report

We need to form both teams by week 2.

- ❖ Week 2 Session 1 – Project Teams
 - ❖ Your group information will be sent to the profs in CS2103T/CS2113T
- ❖ Week 2 Session 2 - OP1 Teams
 - ❖ You will begin preparing for the presentation

CS2103T/CS2113T Project Team Formation

Form ONLY 4 teams in total.

4-5 pax per team.

No 3-pax teams, if possible.

Conditions:

1. Form INTERNATIONAL teams (mixed nationalities).
2. If there are not enough international students, multi-ethnic teams are acceptable.

Team composition

- We allow some freedom in choosing team members, subject to these constraints:
 - **All team members should be in the same tutorial.** Delay forming teams until your place in a tutorial is confirmed. We do not allow changing tutorials to team up with your preferred team mates.
 - **Teams of single nationality are not allowed** unless the only language common among all team members is English. e.g. an all-Singaporean team that include both Chinese and Malay students. Rationale: to train you to work in multicultural teams, to ensure that English is used for all project communication
 - **No more than one exchange students per team** Rationale: to increase interaction between exchange students and NUS students.
 - **Same gender teams are discouraged but allowed.** Rationale: to train you for mixed-gender work environments.
- **We may modify teams** when circumstances call for it. There is no avenue for you to object. Staying with your preferred team is not guaranteed.

<https://nus-cs2113-ay2122s1.github.io/website/admin/tp-teams.html>

<https://nus-cs2103-ay2122s1.github.io/website/admin/tp-teams.html>

The left half of the slide features a minimalist abstract design composed of large, light-colored, faceted geometric shapes, primarily white and light gray, set against a dark gray background. These shapes overlap and interlock, creating a sense of depth and modernity.

Principles of Communication

Group Discussion

Boss: Ted, if you have time, can you send me Q2 numbers, please?
Ted: Ok.

5 hours later...

Boss: (angry) Ted! I'm still waiting for the numbers!
Ted: ??? (confused)



Ted is thinking: *What's wrong with him?? He said "If you have time..." . Well, I DIDN'T have time. I was busy in the warehouse all morning!*

Case A: What happened here?

Mona spots Carl, a co-worker, in the hallway.

Mona: Oh, you got your hair cut!
Carl: Yup.



Carl is wondering: *Why did she say something so obvious?*
Mona is thinking: *He doesn't seem very friendly...*

Case B: What happened here?

Carl bumps into Lena, another co-worker, in the pantry.

Carl: What happened to your hair? It looks like you got caught in a lawn mower!
Lena: ???

Lena is thinking: *WT...? What's wrong with this Carl? So rude. No PR skills.*

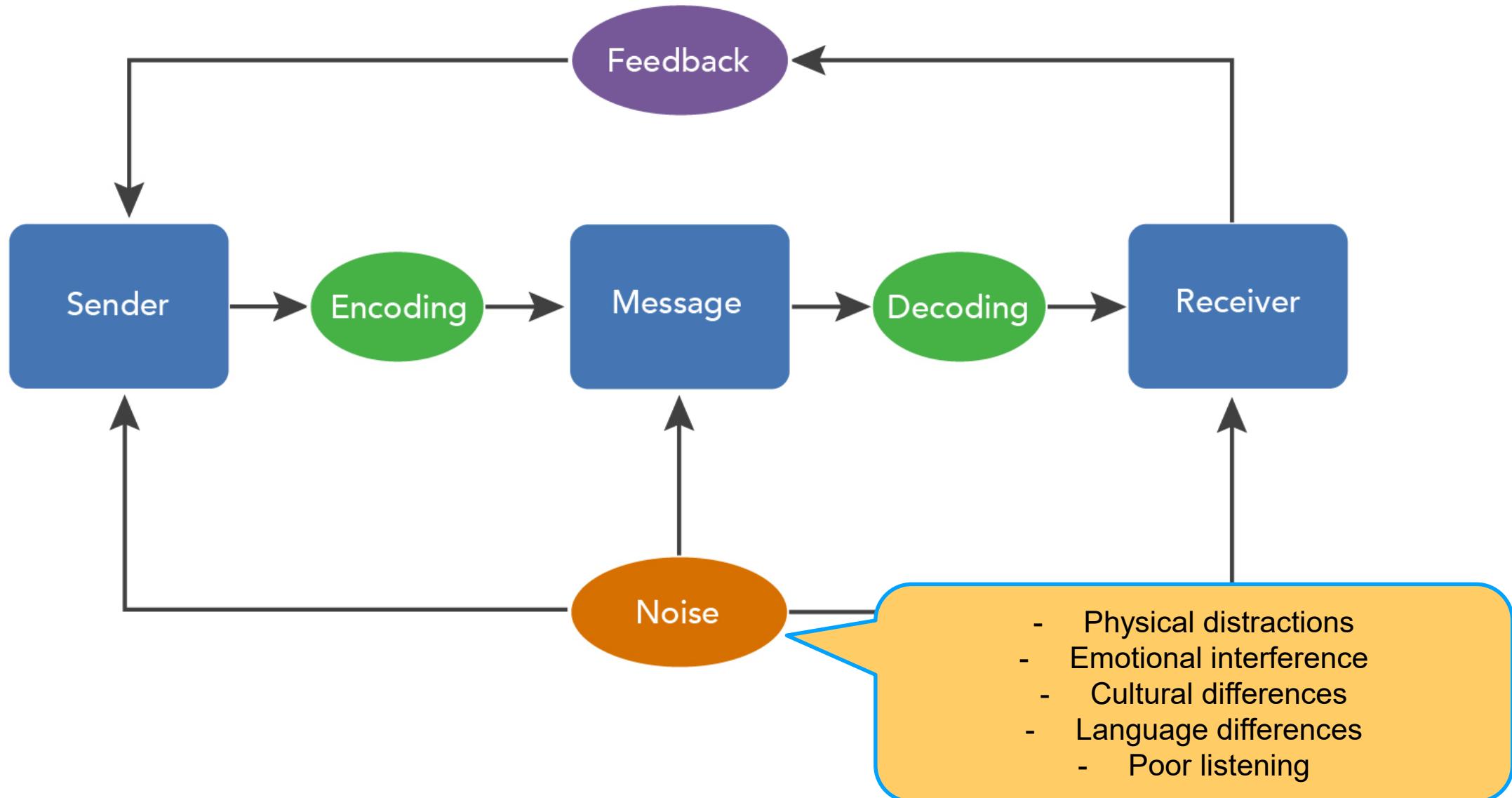
Case C: What happened here?

What communication skills / lessons can you derive from these scenarios?

What happened here?



The Communication Process



Four primary principles of communication:

- 1.** The message sent is not necessarily the message received.
- 2.** It is impossible to not communicate.
- 3.** Every message conveys content (the words you say) and emotions (what you don't say but others perceive).
- 4.** Nonverbal cues may sometimes be more believable than verbal cues.

**The ONE principle to rule them all:
It's not what you say that matters; it's what THEY hear.**

Needs Analysis

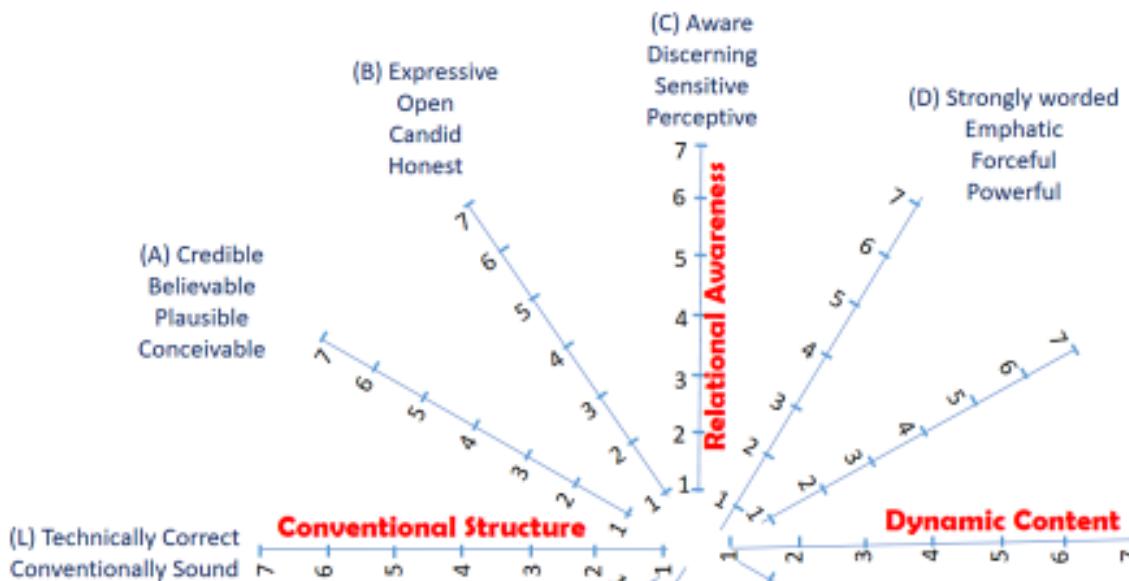
Context

Audience

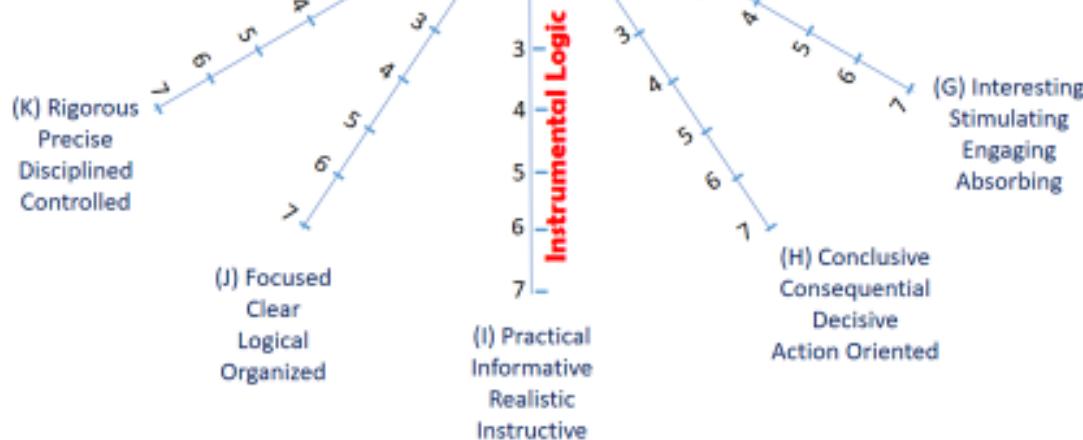
Purpose

Competing Values Framework (CVF)

Relational Aspect



Informational Aspect



Transformational Aspect

Promotional Aspect

Quinn, R., Hildebrandt, H., Rogers, P., & Thompson, M. (1991]. A Competing Values Framework for Analyzing Presentational Communication in Management Contexts. *The Journal of Business Communication*, 28(3), 213 – 231.

Discuss:

Using the CVF framework, rate each communication task.



PRINTER MANUAL



COMMUNICATING
WITH THE PRESS AFTER
AN INDUSTRIAL
ACCIDENT

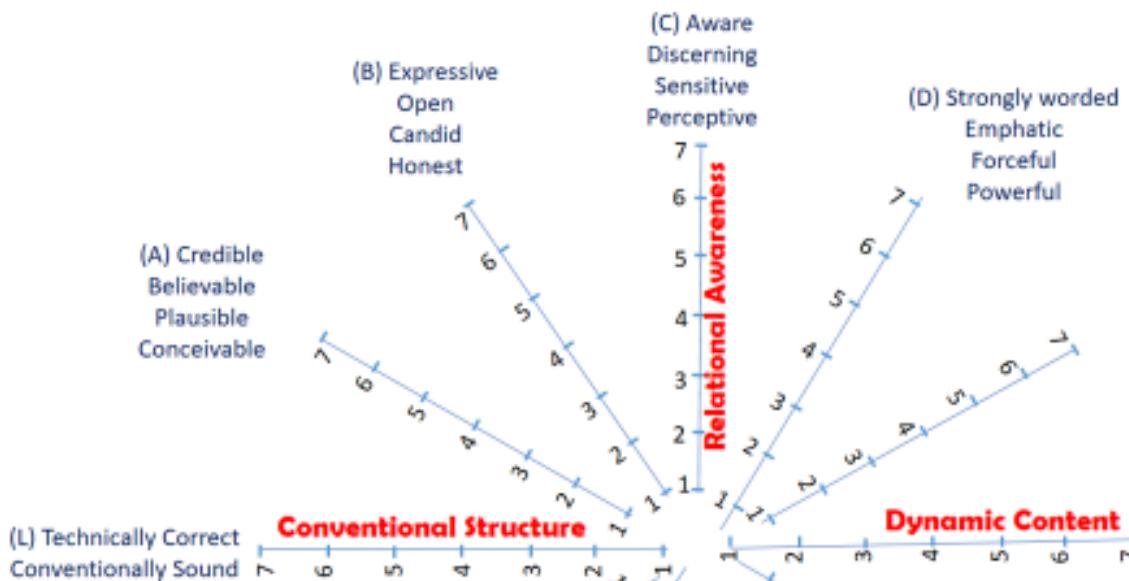


NEGOTIATING WITH
SUPPLIERS/VENDORS
FOR A NEW CONTRACT

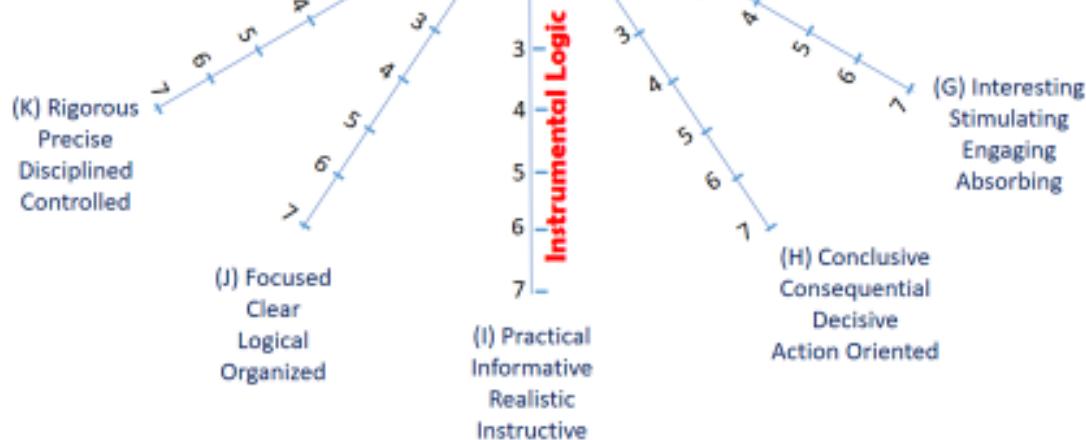


PITCHING A NEW
PROJECT IDEA TO
HIGHER MANAGEMENT
TO SECURE SUPPORT

Relational Aspect



Informational Aspect



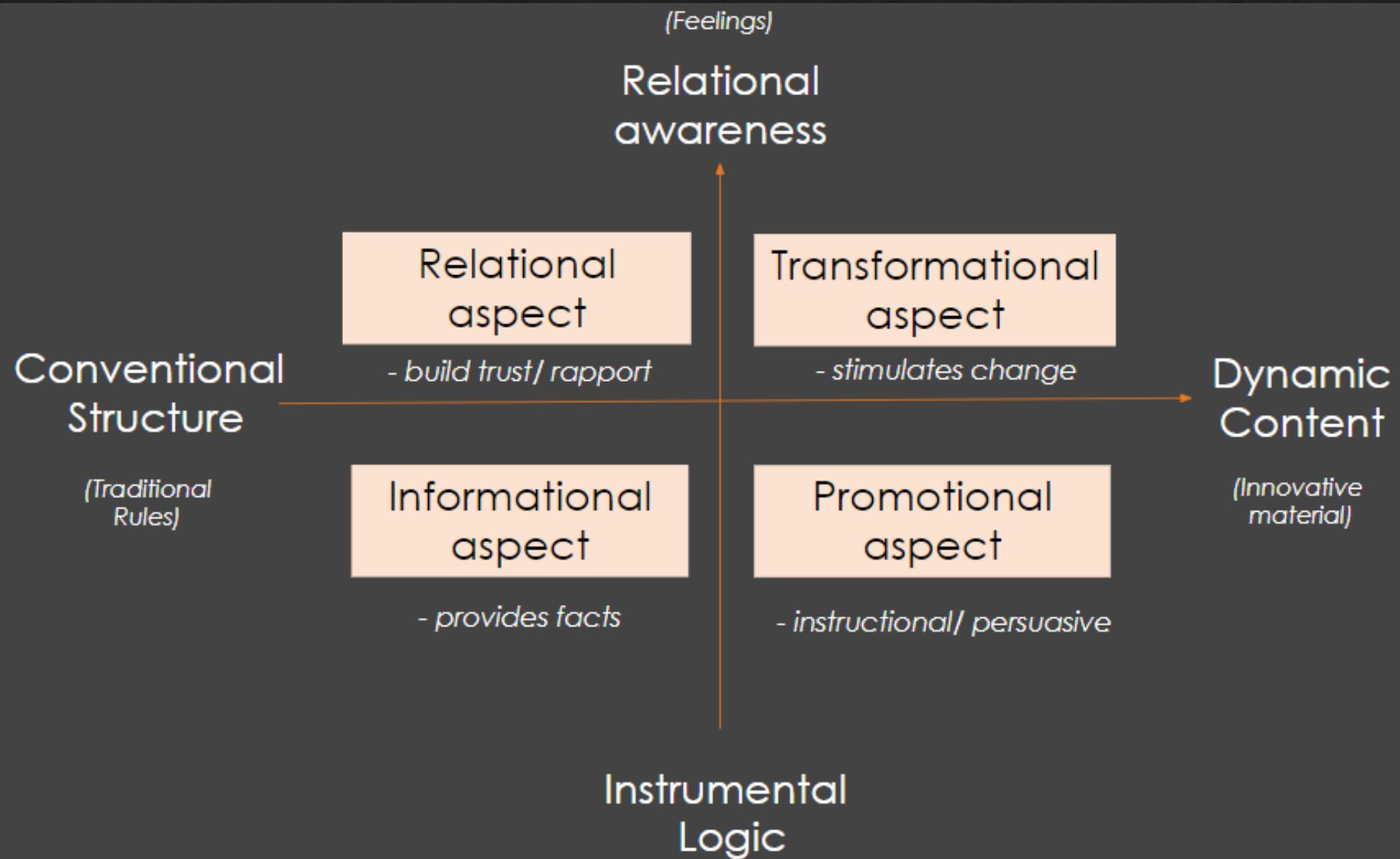
Transformational Aspect

(E) Insightful
Expansive
Mind Stretching
Visionary

(F) Innovative
Creative
Original
Fresh

Promotional Aspect

Quinn, R., Hildebrandt, H., Rogers, P., & Thompson, M. (1991]. A Competing Values Framework for Analyzing Presentational Communication in Management Contexts. *The Journal of Business Communication*, 28(3), 213 – 231.



Needs Analysis

Context

Audience

Purpose

Content

Organisation

Central Message

- Information
- Reasons
- evidence

Frame our thoughts

- Logical
- Coherent

Delivery

Verbal cues

Non-verbal cues

Visuals

Next Session:

- ❖ Think about an industry that interests you. (It could be tech related or non-tech related.)
- ❖ Find out more about the industry trends and choose one to share about in our next session on “Thinking on your feet”.
- ❖ You can use the following sites.
- ❖ <https://www.pwc.com/gx/en/industries.html>
- ❖ <https://www.strategyand.pwc.com/gx/en/insights/industry-trends.html>
- ❖ https://www2.deloitte.com/us/en/industries/technology-media-and-telecommunications.html?icid=top_technology-media-and-telecommunications (You can also go to “Industries” or “Services” to find out more)
- ❖ <https://www.mckinsey.com/> (You can go to “Industries”, “Functions” or “Insights”)

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Week 1: (1) Principles of Communication / Strategic needs analysis (2) Q&A: Thinking on your feet ... +

Mon, January 10, 2022 - Sun, January 16, 2022

Welcome to CS2101!

This module is twinned with CS2103T and CS2113T which means that a lot of the communication-related work in CS2101 will be based on the technical content in CS2103T / CS2113T.

The objective is to equip you with the skills needed to:

1. convey technical information to a mixed technical and non-technical audience, orally and in writing
2. thrive in a team-based environment, which is characteristic of many computing and engineering projects

Your first lesson will be on the 3rd or 4th January.

Your tutors will be writing to you regarding your online zoom lessons. You can also refer to the consolidated document for zoom information.

In **session (1)** you will learn more about the **Principles of communication / Strategic needs analysis**.

In **session (2) Q&A: Thinking on your feet**, you will be sharing an interesting industry trend with your peers

Please come prepared by exploring the four links to leading consultancy firms to read more about the latest industry trends.

Course materials

Your tutors will be uploading their slides for each session.

The general files will be labelled 1.2, 2.1, 2.2 etc.

1.2 means that the file is meant for Week 1 Tutorial session 2.
2.2 means Week 2 Tutorial session 2.



- Weblink: McKinsey - Defining the skills citizens will need in the future world of work**
Do take a look at this article which shares the foundational skills needed to thrive in the future of work. ...
- Weblink: <https://www.pwc.com/gx/en/industries.html>**
For session 1.2 - industry trends ...
- Weblink: <https://www.strategyand.pwc.com/gx/en/insights/industry-trends.html>**
For session 1.2 - industry trends ...
- Weblink: <https://www2.deloitte.com/us/en.html>**
For session 1.2 - industry trends ...
- Weblink: <https://www.mckinsey.com/>**
For session 1.2 - industry trends ...

In this session, you have:

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(i.e. Needs analysis)
- ❖ Demonstrated an understanding of the Competing Value Framework

Your information please!