

Communication and knowledge transfer

One formula and four key rules, each with a worked example, then the two model sheets. They serve IPMA, PMI and APM exams alike.

FORMULA AND KEY RULES

Lines of communication (after Kerzner)

lines = $n \times (n - 1) \div 2$

Each of n people can talk to $n - 1$ others; that counts every line twice, so halve it. The next person added to a team of n adds n lines. A plan fixes the routes that must work.

Example: A team of 6 grows to 9: $6 \times 5 \div 2 = 15$ lines before, $9 \times 8 \div 2 = 36$ after. The 3 newcomers add $6 + 7 + 8 = 21$ lines, and $15 + 21 = 36$

The sender–receiver loop (after Shannon and Weaver, 1949; Schramm, 1954)

sender encodes → channel carries → receiver decodes → feedback returns · noise at every step

Information is what you send; the message is what arrives. Acknowledging is not understanding. When you receive, listen actively (Rogers and Farson, 1957): hear the facts and the feeling, say it back.

Example: After a 20-minute briefing, ask 'What will you tell your team?', not 'Is that clear?'. 2 of 8 people describe the change wrongly, so the slide is fixed

Push, pull or interactive (the PMBOK® Guide's three methods)

push what must arrive · pull for reference · interactive to decide, settle conflict or give bad news

Push may not be read; pull waits to be fetched. APM calls face-to-face contact the richest medium: bad news in person, then the details in writing.

Example: A 2-week slip: tell the steering group in a 10-minute call, then send a 1-page note

One line of the communication plan

what · for whom and why · when · how · owner

ICB4: information plan. PMBOK Guide: communications management plan. APM: communication plan, built on the stakeholder analysis. Review it at each phase.

Example: Status report, 1 page · steering group, to decide · every 2 weeks, push · project manager

Tacit and explicit knowledge (Polanyi, 1966; Nonaka and Takeuchi, 1995)

work side by side · write it down · combine documents · learn by doing

Explicit knowledge can be written down; tacit knowledge lives in people as skill and judgement. Nonaka and Takeuchi's four moves: socialisation (working side by side), externalisation (writing it down), combination (merging what is written), internalisation (learning it by doing). Collect lessons at every review, not only at the end, and act on them.

Example: A specialist with 15 years on an old database leaves in 8 weeks: she pairs with 2 colleagues on 3 real fixes, and they write a 10-step runbook that she checks

IN THIS HANDOUT

Sender–receiver model

p. 2

Communication plan

p. 3

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026); Shannon & Weaver (1949); Schramm (1954); Rogers & Farson (1957); Polanyi, The Tacit Dimension (1966); Nonaka & Takeuchi, The Knowledge-Creating Company (1995); Kerzner, Project Management: A Systems Approach (11th ed.); IPMA International Certification Regulations (ICR) v4.4 (2025)

Key: IPMA = International Project Management Association; ICB4 = IPMA's Individual Competence Baseline; PMI = Project Management Institute; PMBOK® Guide = PMI's body-of-knowledge guide; PMP® = PMI's Project Management Professional; APM = Association for Project Management; PMQ = APM's Project Management Qualification; ICR = IPMA's International Certification Regulations. Unofficial study material for IPMA®, PMI® and APM exams. Not affiliated with, endorsed by or approved by IPMA, PMI or APM, and not an accredited or endorsed training provider. IPMA® and IPMA ICB® are registered trademarks of IPMA in Switzerland and other countries. PMI, PMP, CAPM and PMBOK are registered marks of Project Management Institute, Inc. APM is a trade mark of the Association for Project Management. Other marks belong to their owners. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on [pmi.org](https://www.pmi.org). APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects.

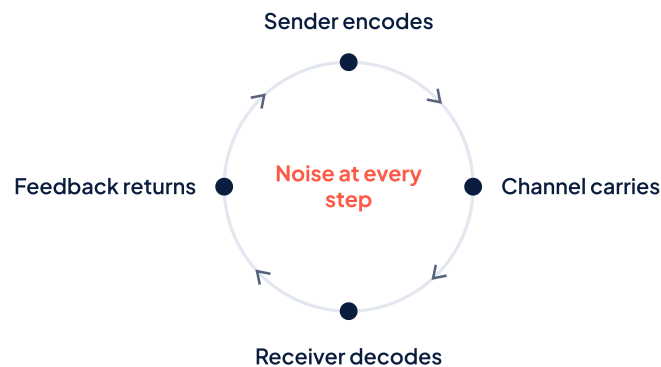


Scan for the episode

All episodes, sheets and handouts: pm.fannarmaximus.com · Watch: youtube.com/@fannarmaximus

Sender–receiver model

Check that the meaning you intend is the meaning that arrives.



Our loop, after Shannon and Weaver (1949) and Schramm (1954); not a copy of their figures.

WHAT IT IS

Claude Shannon and Warren Weaver (1949) described a signal sent through a channel, where **noise** can distort it. Wilbur Schramm (1954) applied the idea to people: each side reads a message through its own experience, and **feedback** turns the line into a loop. The ICB4 (IPMA's Individual Competence Baseline) separates information, what you send, from the message, what arrives.

HOW IT WORKS

- 01 Encode: the one point, in words and pictures that fit this receiver.
- 02 Channel: face to face for feelings; writing for detail and the record.
- 03 Decode: through the receiver's knowledge, language and mood.
- 04 Feedback: they say it back. Do the two meanings match?

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team has 8 months to move parking permits online. The digital permit changes how 40 wardens check cars, on handheld devices.

The project manager briefs them face to face, in 5 groups of 8, and shows the check on a device. Each group then shows her a street check (feedback). One group thought visitor passes still needed paper, so the guide is fixed.

In the exam: Name the receiver, the channel and why, and how you checked understanding; give one misunderstanding feedback caught.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months. Staff in many departments and two suppliers must understand the same few changes.

The steering board agrees 3 core messages; each department head encodes them for their own people. Feedback returns through set channels: accessibility groups' reviews, service-desk reports and a staff forum.

In the exam: Treat the loop as a design: core messages, who translates for whom, feedback channels that bring bad news up early, and how you measured understanding.

WHERE IT SITS

IPMA · ICB4	PMI · PMBOK® GUIDE 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.4.3 Personal communication: information vs message; check understanding (4.4.3.1)	Guide pp. 153–155: communication models, feedback. Outline: People task 8	BoK (APM's Body of Knowledge) §4.1.4: the message, the medium, feedback. PMQ (APM's Project Management Qualification) 10e–10f

Sources: Shannon & Weaver (1949); Schramm (1954); IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026)

Key: IPMA = International Project Management Association; PMI = Project Management Institute; PMBOK® Guide = PMI's body-of-knowledge guide; PMP® = PMI's Project Management Professional; APM = Association for Project Management. Unofficial study material for IPMA®, PMI® and APM exams. Not affiliated with, endorsed by or approved by IPMA, PMI or APM, and not an accredited or endorsed training provider. IPMA® and IPMA ICB® are registered trademarks of IPMA in Switzerland and other countries. PMI, PMP, CAPM and PMBOK are registered marks of Project Management Institute, Inc. APM is a trade mark of the Association for Project Management. Other marks belong to their owners. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on [pmi.org](https://www.pmi.org). APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects. Levels (this series' labels): Mid-level = moderately complex projects (IPMA Level C, PMI's PMP®); Senior = complex projects and people (IPMA Level B, APM's Chartered Project Professional).

All episodes, sheets and handouts: pm.fannarmaximus.com · Watch: youtube.com/@fannarmaximus



Scan for the episode

Communication plan

Plan who gets which information, when, how and from whom.

INFORMATION	FOR WHOM, WHY	WHEN, HOW	OWNER
Status report, one page	Steering group: to decide	Every 2 weeks · push	Project manager
Decision log, current rules	Team, supplier: to act	Same day · pull	Project manager
Coordination call	City team, supplier: to align	Weekly · interactive	Project manager
Build progress, defects	Testers: to steer	Weekly · pull, shared board	Supplier lead
Staff time and tasks	Line managers: to plan	Monthly · push, short note	Project manager

Our example: the internal flow of an 8-month city project with an outside supplier. Illustrative.

WHAT IT IS

One line per information need: what, for whom and why, when, how, and who owns it. The ICB4 (IPMA's Individual Competence Baseline) calls it an information plan, the PMBOK® Guide (PMI's body-of-knowledge guide) a communications management plan; APM (Association for Project Management) builds it on the stakeholder analysis, with feedback channels. The PMBOK Guide's methods: **push** (sent to people), **pull** (fetched from a shared place), **interactive** (a live exchange).

HOW IT WORKS

- 01 Start from roles and decisions: who must decide or do what.
- 02 Give each only what they need, in a form they can use.
- 03 Push what must arrive, pull for reference, interactive to decide.
- 04 n people have $n(n-1)/2$ lines of communication: fix the routes that must work.

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team of 7 has 8 months to move parking permits online with a supplier team of 5, part of it abroad. Staff lent by departments keep their own line managers.

12 people have $12 \times 11 \div 2 = 66$ lines of communication, so the project manager fixes a few on one page: a status report to the steering group every 2 weeks (push), a weekly call with the supplier (interactive), and one shared decision log (pull).

In the exam: Show two or three lines of your plan (what, for whom, when, how, owner), one meeting and its purpose, and one change you made after feedback.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months, with 2 suppliers, 9 owners of old systems and a steering board that takes the key decisions.

The project manager designs one document system, with access rights advised by the data protection officer. Reports roll up from each team to the board. Lessons from each group of services feed the next plan.

In the exam: Explain how the plan links the levels and the organisations, how information stayed consistent and secure, and how you checked that the plan worked.

WHERE IT SITS

IPMA · ICB4	PMI · PMBOK® GUIDE 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.5.5 Organisation and information: information plan; needs (4.5.5.1); flows, no redundant information (4.5.5.3)	Guide §2.5.2.3, p. 72; the plan, p. 117; push, pull, interactive, p. 152. Outline: People task 8	BoK (APM's Body of Knowledge) §4.1.4: communication plan from the stakeholder analysis; §3.5.5 information management. PMQ (APM's Project Management Qualification) outcomes 10b–10c

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026); Kerzner, Project Management: A Systems Approach (11th ed.)

Key: IPMA = International Project Management Association; PMI = Project Management Institute; PMP® = PMI's Project Management Professional. Unofficial study material for IPMA®, PMI® and APM exams. Not affiliated with, endorsed by or approved by IPMA, PMI or APM, and not an accredited or endorsed training provider. IPMA® and IPMA ICB® are registered trademarks of IPMA in Switzerland and other countries. PMI, PMP, CAPM and PMBOK are registered marks of Project Management Institute, Inc. APM is a trade mark of the Association for Project Management. Other marks belong to their owners. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on pmi.org. APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects. Levels (this series' labels): Mid-level = moderately complex projects (IPMA Level C, PMI's PMP®); Senior = complex projects and people (IPMA Level B, APM's Chartered Project Professional).

All episodes, sheets and handouts: pm.fannarmaximus.com · Watch: youtube.com/@fannarmaximus



Scan for the episode