MODULE 2 · SESSION 2

Engineer Retention and Positive Feedback

How migration friction and participant density interact to create durable dependence and reinforcing growth.

Theory session

Advanced

Running case: RelayMesh

ORIENTATION

Where this session sits

2.1 decided who captures value; 2.2 makes customers costly to lose

MODULE 1
Foundations of Defensible Position

MODULE 2
Defensibility Through Market Architecture

MODULE 3
Strategic Advantage Under Rivalry

SESSIONS IN THIS MODULE

2.1 Capture Value from Novelty
Patents, secrecy, complementary assets, speed and contracts

2.2 Engineer Retention and Positive Feedback — YOU ARE HERE
Migration friction and participant density

2.3 Govern a Defensible Platform Ecosystem
Access rules, incentives, standards and enforcement

SESSION OUTCOMES

What this session explains

Two distinct mechanisms that are constantly confused

01 **Switching costs and network effects differ**

One makes leaving expensive; the other makes staying more valuable as others join.

02 **Switching cost is symmetric**

The same friction that holds your customers blocks you from taking a rival's.

03 **Network effects have a threshold**

Below critical mass they work against you; above it they compound.

04 **Multi-homing dissolves both**

If participants can cheaply use two platforms, neither mechanism protects anyone.

DEFINITION

Two mechanisms, often merged

They require different investments and fail in different ways

WORKING DEFINITION

A switching cost is what a customer must give up to leave. A network effect is the increase in value each participant receives as others join. One is a barrier to exit; the other is a reason to arrive.

1

Switching costs are per-customer

They accumulate individually — data, training, integration, contracts. They do not require anyone else to be present.

2

Network effects are collective

Their strength depends on how many others participate, which is why the early period is the hard one.

3

They compound when combined

A platform that is both valuable because others are there and costly to leave is the most defensible architecture available.

Klemperer, P. (1995). Competition when consumers have switching costs. Review of Economic Studies, 62(4). · Katz, M. & Shapiro, C. (1985). American Economic Review, 75(3).

CONCEPT 1 · TAXONOMY

Six kinds of switching cost

Each is created deliberately, and each can be dismantled by a determined rival

DATA AND HISTORY	Accumulated records that do not transfer. The strongest and the most scrutinised by regulators.
INTEGRATION	Connections built into the customer's own systems — Foodstuffs' 3,000 suppliers.
LEARNING	Trained users and established process. Real, and it decays as interfaces converge.
CONTRACTUAL	Term, notice, minimum commitment. Enforceable and resented.
RELATIONAL	Trust, familiarity, escalation paths. Genuine and transferable with people.
COMPLEMENTARY INVESTMENT	What the customer built around you — workflows, reports, adjacent tools.

THE STRONGEST

Data and integration

Both accumulate without effort on your part and grow with tenure — the asset mass mechanism from Session 1.2.

THE CAUTION

Resented friction is fragile

Costs customers experience as a trap invite regulatory attention and reduce advocacy.

CONCEPT 2 · SYMMETRY

Switching cost cuts both ways

The consequence most strategies leave out

WHEN YOU HOLD THE BASE

It protects you

WHAT IT DOES

Rivals must compensate customers for the migration cost before they can compete on merit.

THE ECONOMICS

You can price above a rival's offer by roughly the switching cost and still retain.

THE EVIDENCE

Foodstuffs' 3,000 supplier integrations were a formidable barrier to any challenger.

WHEN YOU ARE ATTACKING

It blocks you

WHAT IT DOES

Every prospect's incumbent has the same protection, so you must fund the migration to win.

THE ECONOMICS

Acquisition cost rises by the customer's switching cost, permanently.

THE IMPLICATION

High-switching-cost markets reward whoever arrives first and punish late entrants severely.

THE STRATEGIC CONSEQUENCE

This is why switching cost is a timing argument as much as a defence argument. In such markets, being early is worth more than being better.

CONCEPT 3 · NETWORK EFFECTS

Four kinds, with different strengths

Only one of them scales without limit

1

Direct

Each user makes the product more valuable to other users of the same type. Communication networks; strongest and rarest.

2

Indirect (two-sided)

More of one side attracts more of the other. Marketplaces and platforms — RelayMesh's shape.

3

Data

More usage improves the product for everyone. Real, and frequently overstated: it saturates sooner than founders expect.

4

Local

Value depends on a specific neighbourhood — a region, an industry, a supply chain — not on global scale.

5

Negative

Beyond a point, more participants reduce value: congestion, noise, quality dilution.

THE HONEST QUESTION

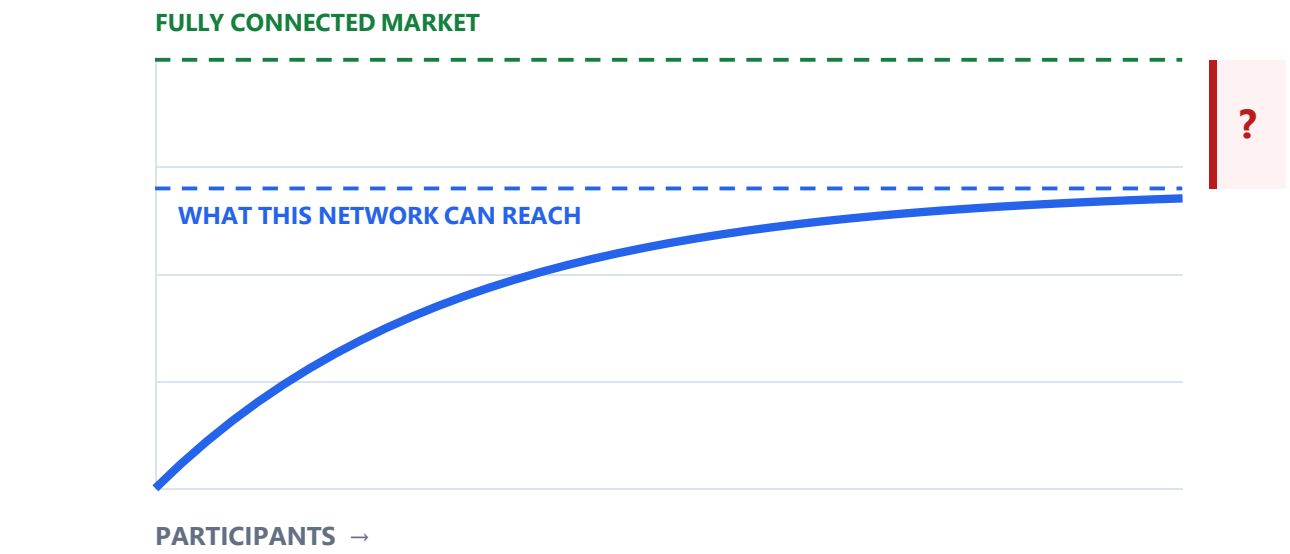
Local or global?

Most B2B network effects are local. That is defensible within a neighbourhood and does not stop a rival owning the one next door.

CONCEPT 4 · CRITICAL MASS

Below the threshold, the mechanism works against you

The same feedback that compounds later suppresses adoption early



Below critical mass, each participant sees little value and leaves — which reduces value further. Above it, the same loop runs in reverse.

Rohlfs, J. (1974). A theory of interdependent demand for a communications service. Bell Journal of Economics, 5(1).

CROSSING IT

Subsidise one side

Seed the scarcer side, guarantee liquidity manually, or start in a narrow neighbourhood where the threshold is low.

FOODSTUFFS' ADVANTAGE

The base already existed

Replacing infrastructure beneath an established network avoids the cold-start problem entirely.

THE MEASUREMENT

Find the local threshold

Ask how many participants a single neighbourhood needs before it sustains itself — that number is your entry unit.

CONCEPT 5 · MULTI-HOMING

The condition that dissolves both mechanisms

If participants can cheaply use two platforms, neither one is defended

SINGLE-HOMING

Participants use one platform only. Winner-take-most dynamics; network effects fully protective.

PARTIAL MULTI-HOMING

One side single-homes, the other does not. The single-homing side is where the power sits.

FULL MULTI-HOMING

Everyone uses several. Competition reverts to price and features; the architecture defends nothing.

RAISING THE COST OF MULTI-HOMING

Lever	How it works
Exclusivity terms	Effective and adversarial; increasingly constrained by competition authorities.
Volume-based pricing	Concentrating spend becomes cheaper than splitting it. Voluntary and durable.
Deep integration	Workflow embedded in the customer's own systems makes a second connection genuinely costly.
Accumulated history	The second platform starts without the data that makes the first one useful.

CONCEPT 6 · MIGRATION

Moving a network without breaking it

The Foodstuffs sequence, generalised

REPLACING INFRASTRUCTURE BENEATH A LIVE NETWORK

- Absorb the variety centrally, not at the edges
- Run both systems in parallel
- Cut over without asking participants to act
- Judge success by what did not change

THE CHOICE THAT MADE IT POSSIBLE

The design decision was to handle flexible messaging standards in the platform rather than imposing one rigid format on 3,000 suppliers. Friction absorbed centrally is friction that does not become 3,000 separate projects.

CONCEPT 7 · FAILURE MODES

Three defences that are weaker than they look

Each is claimed frequently and holds rarely

Contractual lock-in alone

Looks like Long terms and notice periods.

Why it fails It delays departure rather than preventing it, and it converts customers into detractors.

Fix Build value-based switching costs — data, workflow, history.

Claimed network effects

Looks like "We get better with more users."

Why it fails Most data effects saturate early, and most B2B network effects are local.

Fix Measure whether participant N+1 measurably improves things for participant N.

Ignoring multi-homing

Looks like Share growth while rivals also grow.

Why it fails Participants are using both; no one has tipped anything.

Fix Measure share of each participant's volume, not share of participants.

CASE STUDY

Foodstuffs

A supplier exchange carrying 73 million transactions a year, replaced without the network noticing.

CASE STUDY · FOODSTUFFS

A network switched without disruption

Continuity designed in as the objective

THE INSTALLED BASE

Switching cost at scale

THE VOLUME

The legacy Supplier eXchange processed over 73 million transactions annually.

THE PARTICIPANTS

More than 3,000 connected suppliers, each with their own integration.

WHY THAT IS A MOAT

The cost of migration sat with every one of them, not with the platform owner alone.

THE MIGRATION

Friction absorbed centrally

THE CONSTRAINT

Replacement had to be delivered within a few months, without a second project for suppliers.

THE DESIGN

Flexible messaging standards absorbed the variety, rather than forcing one rigid format outwards.

THE RESULT

A seamless go-live with zero impact across suppliers; capacity of 50,000 messages per hour.

READING THE CASE

The best evidence of a successful network switch is what stayed stable while the system underneath changed. Switching cost is an asset — and a liability when you are the one who must migrate.

APPLICATION

Bringing the theory to RelayMesh

Auditing the architecture honestly

Mechanism	What you measure	RelayMesh finding
Switching cost	Estimated days and cost for a participant to leave.	Small shippers: two weeks. Large carriers: six months.
Network effect type	Direct, indirect, data, local.	Indirect and local — strong within a trade lane, weak across lanes.
Critical mass	Participants needed per neighbourhood.	Roughly nine carriers per lane before it sustains itself.
Multi-homing	Share of each participant's volume, not headcount.	Carriers route 40% through us — they are multi-homing.
Symmetry check	Cost to win a rival's participant.	Equal to our own defence; expect slow share gains.
The real defence	Which mechanism is actually load-bearing.	Lane-level density, not contracts. Invest there.

WHAT COMES NEXT

Session 2.3 decides the rules by which participants join, behave and are removed.

SUMMARY

What to carry out of this session

1. **Switching costs and network effects are different mechanisms.**
   One is a barrier to exit, the other a reason to arrive.

2. **Switching cost is symmetric.**
   It defends your base and raises the cost of taking anyone else's.

3. **Below critical mass the feedback runs against you.**
   Start in a neighbourhood whose threshold you can actually reach.

4. **Measure multi-homing by volume share, not headcount.**
   Growing alongside a rival usually means nobody has tipped anything.

5. **Value-based friction beats contractual friction.**
   Contracts delay departure and create detractors; data and workflow do not.

FURTHER READING

Sources for this session

Primary references behind each concept

SWITCHING COSTS	Klemperer, P. (1995). Competition when consumers have switching costs. *Review of Economic Studies*, 62(4), 515–539.
SWITCHING COSTS	Farrell, J. & Klemperer, P. (2007). Coordination and lock-in. *Handbook of Industrial Organization*, vol. 3.
NETWORK EFFECTS	Katz, M. & Shapiro, C. (1985). Network externalities, competition, and compatibility. *American Economic Review*, 75(3), 424–440.
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MULTI-HOMING	Rochet, J. & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, 1(4), 990–1029.
COLD START	Chen, A. (2021). *The Cold Start Problem.* New York: HarperBusiness.