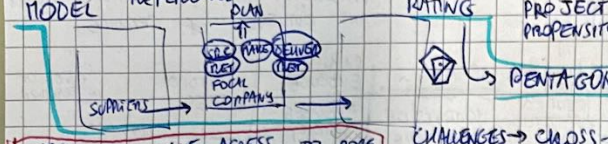
15) SUPPLIER INNOVATION

SCOR MODEL → SUPPLY CHAIN OPERATIONS REFERENCE



SUPPLIER KNOWLEDGE → HAVE ACCESS TO MORE COMPANIES (UPSTREAM INTEGRATION)

ADVANTAGES → FORESEE PROBLEMS IN EARLY DEVELOPMENT (CROSS-FUNCT. INTEGRATION)

CONTEXT DRIVEN ANALYSIS (2X)
- → INTERNAL: MAP EXISTING COMPETENCIES W. APPLICATIONS
- → EXTERNAL: IDENTIFY MARKETS, THEIR EVOLUTION, FUTURE NEEDS

CORE COMPETENCES (VRIN) → VALUABLE, RARE, IMPERFECTLY IMITABLE, NON SUBSTITUTABLE (→ COMPETITIVE ADVANTAGE)

PULL VS PUSH INNOVATION
1. PULL: COMPANY SEEKS EXT TO SOLVE A PROBLEM
2. PUSH: EXT IS ENCOURAGED TO PROPOSE TECH THAT BENEFITS COMPANY

TRENDS IN COLLABORATION → MORE, AS WHOLE SYSTEMS, NOT JUST PARTS
↓
SHORTER TIME TO MARKET
(SECURE DEALS SOONER)

PROCUREMENT OFFICE: ACTS AS INTERNAL CONSULTANT, ORCHESTRATOR OF VALUE

MODERN PHASES TO DEV. THROUGH PROCUREMENT
1. INVESTIGATIVE: BUYING GIVES WINDOW INTO MARKET TECH (KNOW FROM SUPPLIERS)
2. LABORATORY: FEEDBACK ON SPECIFICATIONS IS GIVEN DURING DESIGN REVIEWS
3. MANUFACTURING, PROCUREMENT: PROBLEMS AVOIDED THANKS TO PURCHASING

PROBLEMS IN PRACTICE (ORGANISATIONAL)
- LITTLE EXP AND NO CLEAR AGREEMENTS
- MANUFACTURER HAS NIH SYNDROME
- SUPPLIER CHOSEN BASED ON PRICE, NOT INNOVATIVE

!!!

SUPPLIER ORGANISATION → FEWER, MORE COMPARTMENTALISED

PLACING SUPPLIERS IN COMPETITION → MORE CRITERIA TO PICK
! DIVIDE INTO INNOVATION AND COST SUPPLIERS !

GLOBAL VENDOR RATING → QUALITY, COST, SERVICE: SCORE WEIGHT ($\Sigma = 1$)
↳ TOTAL MEAN, HENCE RATING
↳ SUPPLY VOLUME ∝ RATING → CHANGE OTHERWISE

SUPPLIER RATING → DISTANCE, COMPETENCES (SPECIALISATION), QUALITY OF INNOVATION, PROJECT EXPERIENCE, PROPENSITY TO COLLABORATE
↳ PENTAGONAL CHART

CHALLENGES TO COLLABORATE → CROSS-FUNCTIONAL INTEGRATION, DEVELOP CULTURAL SHIFT, IP CONCERNS, LOSS OF CONTROL

DANGER TO COLLAB. → TOTAL DEPENDENCE ON FIRM, PROVIDING VITAL PARTS

16) COMMUNITIES

PRINCIPLES → SIZE, CONTINUOUS CONNECTION, CONSCIOUS ACTIVE PARTICIPATION

TYPES

	SOCIAL TIES WEAK	SOCIAL TIES STRONG
CONSUMER INTENTS HIGH	DEVOTEE	INSIDER
LOW	TOURIST	MINGER

17) TOOLS FOR COLLABORATION WITH CUSTOMERS

ROLE OF INTERNET → KNOWLEDGE SHARING:
- SELF INFORM, COMPARE ON FEATURES, PRICING
- SHARE EXPERIENCES, GIVE FEEDBACK

ADVANTAGES OF CUSTOMS. → USERS CREATE VALUE BY THEMSELVES

CUSTOMER KNOWLEDGE ABSORPTION (3X) → TACIT (CODIFICATION), SOCIAL (K. SOURCE), PERCEPTION (BREADTH)

CUSTOMER INVOLVEMENT (X STEP) → PROPOSE VALUE, IDEAS, DESIGN, TESTING, COMMUNICATION

CROWDSOURCING → LEGO, DANONE, SURVEY FLAVOURS
PRODUCT CONFIGURATION + BETA VERSIONS

P2P DISTRUPTION (PLATFORM BUSINESS MODEL) → CUTS OUT MIDDLEMEN, AIRBNB, WIKIPEDIA
COST REDUCTION / MORE & QUALITY

PRESSURE TO PICK ONE DESIGN → LEARNING EFFECT + NETWORK EXTERN. (IMPROVED SERVICE FROM COMMUNITY) ARTIFACTS

!!!
INDIRECT NETWORK EFFECT → MORE USERS, MORE UTILITY; MORE SERVICES EXT. DEV.

DOMINANT DESIGN → MARKETS W. WINNER TAKES, REGUL., GOV., NATURAL MONOP., ALL

EXAMPLES: POSTAL, UTILITIES (HIGH COSTS), RAILWAY NETWORKS

TWO-SIDED MARKET: AMAZON: CROSS-SIDE EFFECTS, INCREASE IN SELLER/CONSUMER ADDS UTILITY TO OTHER
SAME FOR BUYER

18) FOSS → RUN BY/FOR USERS

2X ACTION MODEL → PRIVATE INVEST. (PROFIT, CENTRALISED)
COLLECTIVE (VOLUNTARY, DECENTR., LEADERS FROM TRUST)

REQUIREM. FOR COLLECTIVE → INTANGIBLE GOODS, HENCE CHEAP TO DIFFUSE

PROJECT COORD. → CLEAR VISION, DIVIDES PROJECT, ATTRACTS DEVELOPERS

INCENTIVES →
- ECON. (SOFTWARE FREE)
- SOCIAL (FIGHT FOR FREE SOFTWARE)
- TECH (LEARNING)

EXAMPLES → ARDUINO (PHYSICAL), ZERO PRESTIGE SURFBOARDS

RULE OF 10X COST FOR EACH STAGE
⇓
PLANNING IS A LOT BETTER THAN UPDATING

PROJECT ROADMAP:

PROTOTYPE → CORE → DIFFERENT VERSION DEPENDING ON NEEDS

PDI - STUDY SHEET

3) BASIC R&D

SCIENTIFIC GOALS FOR PROSECTS OF RESEARCH (UNIS/PARTNERS)

BREAKTHROUGH: RADICAL CHANGES IN PRODUCTS, CREATES NEW MARKETS (NO FEEDBACK) (1y)

PLATFORM: NEW GENERATION OF PRODUCTS, 1y TIME TO MARKET

DERIVATIVES: INCREMENTAL IMPROVEMENTS, BASED ON CUSTOMERS, LITTLE TIME, LIMITED MONEY

COST REDUCTION/LAW COMPLIANCE: BIG CHANGES / RISK, BC YOU CHANGE A LOT TO PRODUCE AN EXISTING PRODUCT

BYPRODUCT ↓ WOOD PELLET FROM FUEL

NEW PRODUCTS IN EXISTING MARKETS, THROUGH MINIMAL CHANGES (EXPORT/REPURPOSE)

PROJECT MAPS
(SIZE OF DOTS FOR MAN-HOURS)
(COLORS FOR TIME TO FINISH)

NEWER PRODUCT
- NEW A PROCESS ← BREAKTHROUGH ← RISKS
- INNOVATIVE DERIVATIVE (GOES FROM EXISTING TO COMPLETELY NEW)
- (FROM NEW TO INCREMENTAL PROCESS)

INNOVATIVE COMPANY
(IF A PRODUCT IS TOO NEW IT COMPETES WITH THE COMPANY)

NEWER PRODUCT
- [INNOVATIVE FIRM]
- [CUSTOMER FIRM]
- PROCESS

COMPANY STRATEGY BY PROJECTS

PLANNING PROJECTS ↓ DYNAMIC RESOURCE ALLOCATION

CONCURRENT TO BEST SPLIT RESOURCES, BUT THEN IT HAS MORE PEOPLE/ORGANISATION

2)

STAGE GATE MODEL: IDEATION, DEVELOPMENT, REVIEW, LAUNCH, POST-DEV } GO, KILL, REVIEW, FREEZE

SERVICE INNOVATION → CUSTOMISATION, PROTOTYPES

BUSINESS INNOVATION → SAAS, PRINTER INK

VALUE INNOVATION → "LUXURY" PRODUCTS, SELLING STATUS

MARKET INNOVATION → GLOBALISATION, NEW CUSTOMERS, NEW USES

PROJECT MATRIX

* IMPORTANT

DEVELOPMENT PROCESS

4) HIGH-CHANGE ENVIRONMENT FIRMS: QUICK, HIGH QUALITY, LOW INVEST. COSTS
⇓
TIME TO MARKET REDUCES, SO PRODUCT DEV. IS CONTINUOUS

STAGE-GATE MODEL
- KILL → DOES NOT ALIGN WITH COMPANY GOALS
- REVIEW → RE-ANALYSE
- FREEZE → TOO EARLY/MARKET NOT READY

FLEXIBILITY TO CHANGE DECREASES AFTER EACH PASSED STAGE.

CONTROL MECHANISM: GO/KILL/REVIEW/FREEZE
→ IDEA, SCOPE, DEV, TEST, PROCESS, LAUNCH

GATE CHECKS
- CORPORATE GOALS
- MARKETING CRITERIA
- R&D CRITERIA
- FINANCIAL
- PRODUCTION

- CONSISTENT WITH CORPORATE IMAGE
- MARKET SIZE/SHARE/LIFE
- PRICING, LAUNCH COSTS
- COMPATIBLE WITH DISTRIBUTION CHANNELS OF COMPANY

TECHNICAL LIFE CYCLE (RULE OF 10X FOR CHANGE COST AT EACH STAGE)

PRODUCT COST INCREASES AS BUDGET, WITH COST OF CHANGE INCREASING
FASTEST EARLY PHASES → CHEAP | EARLY → 80-90% BUDGET OF TOTAL

"FAIL FAST, FAIL OFTEN"

SEQUENTIAL ENGINEERING → NEXT STAGE ONLY AFTER THE PREVIOUS IS OVER (REDUCE UNCERTAINTY)

CONCURRENT ENGINEERING → MORE INVOLVED MANAGERS, EARLY INVOLVEMENT OF ALL (FEWER LATER SURPRISES)
↓
MIX OF MODELS FOR CONVENIENCE
↳ LOWER TIME TO MARKET, COSTS COME SOONER

ICT SUPPORT → COMMUNICATION, MOCKUPS, CAD, RAPID PROTOTYPING (FOAM CAR REPLICAS) ↓ CUSTOMISATION

- COMMERCIAL RISK → NO CUSTOMERS
- TECH RISK → NO NEW TECH

LOGISTIC CONSIDER. → TIME VS COST TRADEOFF

LAW COMPLIANCE CAN BE FOR SUSTAINABILITY

INNOVATION

RISK
- COST
- NO GUARANTEE
- DISTURBS OPERATIONS

ALTERNATIVES
- INNOVATIVENESS
- CONTINUOUS IMPROVEMENTS
- INVOLVES AN INNOVATION PROCESS

COMPLEXITIES
- COMPETITIVE (INFORMATION)
- FINANCIAL: INVEST. VS TURNOVER
- INDUSTRY: COMMUNICATION
- DEMAND: MARKET EDUCATION
- CONVERGENCE (NEED X+ COMPETENCE)

5) DESIGN FOR...

ALWAYS A TRADEOFF

MULTIPLE OPTIONS — ASSESS PRIORITIES

COST REDUCTION — YOU SHOULD ONLY CARE ABOUT PURPOSE, REMOVING UNNECESSARY PARTS

DESIGN FOR...
- ASSEMBLY (REDUCE/SHARE PARTS)
- MANUFACTURE (AVOID DESIGN ITERATIONS)

} ABOUT PRODUCT DEVELOPMENT COST

ADVANTAGES OF DFX — CONSIDER INNER/OUTER GOALS 2X THROUGH CONCURRENT ENGINEERING

DFA
- SYMMETRY — FEWER COMPONENTS
- NO SCREWS
- NO REALIGNING
- ASSEMBLY DIRECTION (TOP TO BOTTOM)

DFM
- FEW TECHNOLOGIES
- SIMPLICITY, NO NEW TOOLS
- FEW SPECIAL MATERIALS

} BUT THEN IT'S INTUITABLE EASILY

↳ PATH OF LEAST RESISTANCE

DFX OTHERS
- ENVIRONMENT
- LOGISTICS (PACKAGE SIZES)
- SERVICEABILITY
- DETOXIFICATION
- DEMATERIALISATION

8) NEW SERVICE DEVELOPMENT

SERVICE — APPLICATION OF SPECIALISED COMPETENCES (SKILLS/KNOWLEDGE) FOR THE BENEFIT OF ENTITY

↓ NOWADAYS BUNDLE: PRODUCT + SERVICE

QUALITY — ABILITY OF PRODUCT/SERVICE TO CONSISTENTLY MEET/EXCEED CUSTOMER EXPECTATIONS

↓ KNOWLEDGE → FIRM MUST UNDERSTAND CUSTOMER PERCEPTION OF QUALITY, HOW THE SERVICE QUALITY IS AFFECTED

COMPONENTS OF QUALITY → SECURITY, PRIVACY IN SPACES

SERVICE ENCOUNTER → MOMENT OF TRUTH (NEVER 2nd CHANCE TO MAKE A GOOD IMPRESSION)

CUSTOMER INTERACTS, CHANGES IMPRESSION

OPPORTUNITIES — LOYALTY, BRAND IDENTITY, TRUST

PROCESS VS CUSTOMER ORIENTED → GOV/HOSPITAL VS LUXURY TRADE

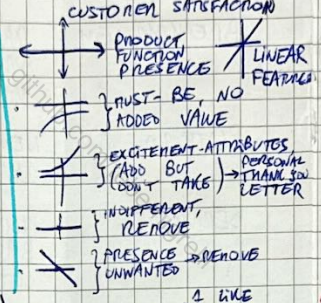
HOTEL EXAMPLE: CHECKIN, BROUGHT TO ROOM, MEAL, WAKEUP CALL, CHECK OUT

NEW IDEA DEVELOPMENT → DIVERGENT THEN CONVERGENT PHASE
BUSINESS OPP ⇒ SCREEN, TEST ... COMMERCIALISE

6) DESIGN FOR QUALITY:

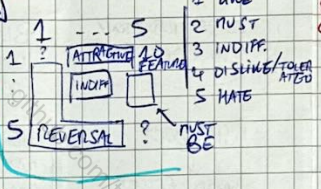
KANO MODEL — SATISFACTION VS ACCESSIBILITY, RANKING OF IMPORTANCE

EVOLUTION OF FEATURES OVER TIME (ATTRACTIVE, LINEAR, MUST-BE)



KANO METHODOLOGY: QUESTIONAIRE IN (2x) SATISFACTION WITH/OUT (1-5)

KANO METHOD. RESPONSE



GUIDELINES:
- COVER MUST-BE
- PERFORM BETTER IN LINEAR
- OFFER ATTRACTIVE
- CHECK FOR INDIFFERENT FUNCTIONS

GAP MODEL OF SERVICE QUALITY (KNOWLEDGE, POLICY, DELIVERY, COMMUNICATION, PERCEPTION) — INFO ASYMMETRY BETWEEN MANAGERS/DESIGNERS/TECH AND CUSTOMERS → CLOSE IT WITH SURVEYS.

IF CUSTOMERS RECEIVE MORE THAN EXPECTED — COMPANY MISPRICED THE PRODUCT

QUALITY FUNCTION DEPLOYMENT MODEL — 4X CHARTS COMPARING CUSTOMER NEEDS VS PRODUCT FUNCTIONS
- PRODUCT, PARTS, TECH, PRODUCTION

HOUSE OF QUALITY (000)

ADVANTAGES → COMPETIVE, TECH., RELATIONAL (KNOW HOW)
- KEEP KNOWLEDGE OF COMPETITION
- RELATE QUALITATIVE INTO MEASURABLE
- RELATION BETWEEN TARGETS AND SOLUTIONS

DISADVANTAGES → TIME, COST TO PRODUCE
→ COST TO ACQUIRE INFO
→ COMPLEXITY OF METHOD (RISK OF BECOMING BUREAUCRACY)

PROPERTIES OF SERVICES
- → INTANGIBLE (CAN'T BE ANTICIPATED, BUT CHEAP TO DESIGN)
- → HETEROGEN. (HARD TO STANDARDISE COMPARED TO PRODUCTS)
- → INSEPARABLE (INTERACTIVE CONSUMED WHILE PRODUCED)
- → PERISHABLE (CANNOT MAKE AN INVENTORY)
  ↳ HOW MANY CHEABLE WAITERS?

8) OFFERING

→ TO DESIGN SERVICE FOCUS ON THE EXPERIENCE YOU WANT FOR CUSTOMERS (TARGETS → EXCELLENCE, CONVENIENCE, FRIENDLINESS)

FUNDING → SERVICING MAY HELP REDUCE COSTS / INCREASE REVENUE (UPCHARGE)

EMPLOYEE MANAGEMENT → MOTIVATION, ABILITY, IS THE JOB REASONABLE

CUSTOMER MANAGEMENT → HOW IS CUSTOMER FEEDBACK INCORPORATED? HOW ARE CUSTOMERS MOTIVATED? → SMILEY FACE BUTTONS

SELF-SERVICE → MARKETED AS CONVENIENT, WHILE REDUCING FIRM COSTS (AUTO SCAN IN SUPERMARKET) / SELF-SERVE COSTS BACKLAGE

↓ REDUCE COST, UP TO BUSINESS INNOVATION

13) COLLABORATIVE-DISTRIBUTED INNOVATION

TYPES OF KNOWLEDGE — TACIT VS EXPLICIT
- TACIT: WORK CULTURE, PERSONAL
- EXPLICIT: MANUALS, CODIFIED, EASILY DOCUMENTED

TRANSFER (4X) — SOCIALISATION, EXTERNALISATION, COMBINATION, INTERNALISATION

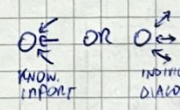
REACH VS RICHNESS — INFORMATION TRANSMISSION TRADEOFF (TECH RAISED BAR)

DISTRIBUTED INNOVATION — HIERARCHICAL ⟷ HETERARCHICAL
COLLABORATIVE INNOVATION — VIRTUAL COMMUNITY, FOSS, KNOWLEDGE BROKERS

↓ CLASSIFICATION 4X OF ...

	FIRM-CENTRIC	MARKET-CENTRIC
	COLLABORATIVE INNOVATION, KNOWLEDGE IMPORT	VKB → SEE.CO MANY TO MANY
	COMMUNITIES/ VACATIONS	FOSS

COLLABORATIVE INNOVATION W. CUSTOMERS → BUSINESS TO BUSINESS / TO CONSUMER
INDIVIDUAL BASIS OF FOCUS GROUPS



} SAME WITH SUPPLIERS

↓ GATHERING IDEAS: WEBSITE, CHALLENGES, VIRTUAL COMMUNITIES, CUSTOMER REVIEWS

COMMUNITY OF PRACTICE — PEOPLE SHARING KNOWLEDGE (QUORA), MUST HAVE SUFFICIENT SIZE, CONTINUOUS CONNECTION, ACTIVE PARTICIPATION, GIVING A SENSE OF BELONGING

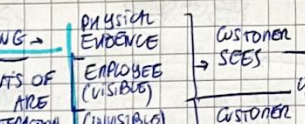
VKB — INTERMEDIARIES TO INTERMEDIARIES (2000') FACILITATE INNOVATION BETWEEN FIRMS

9) SERVICE BLUEPRINT

BLUEPRINT → METHOD TO VISUALIZE SERVICE PROCESS, IN POINTS OF CUSTOMER CONTACT AND EVIDENCE OF SERVICE

↓ DRAWING → MOMENTS OF TRUTH ARE ANY INTERACTION WITH EMPLOYEE

(IN INSURANCE, THEY IDENTIFY PATTERNS AND NOTES BASED ON THEM)



EACH COLUMN ARROWS GO UP OR DOWN

BENEFITS → DESIGN MOMENTS OF TRUTH AROUND THE CUSTOMER, RECOGNISE ROLES AND DEPENDENCIES (INFORMATION)

WHO DRAWS BLUEPRINT → SERVICE MARKETERS: CREATE CUSTOMER EXPERIENCE; OPERATION MANAGEMENT: QUALITY CONTROL, FAIL POINTS

HR: JOB DESCRIPTION, SELECTION, APPRAISAL, CULTURE
IT: TOOLS, SPECIFICATIONS

THEMES IN SERVICE ENCOUNTERS (4X)
- → ADAPTABILITY (UNUSUAL PROBLEMS)
- → SPONTANEITY (UNPROMPTED EMPLOYEE ACTIONS)
- COPING (EMPLOYEE REACTIONS TO LISTENING TO CUSTOMER)
- RECOVERY (HOW THE EMPLOYEE REACTS TO IT FAILURE)

HUMAN QUALITY INTO PROCESS → EMOTIONS ARE A WAY TO INTERACT WITH CUSTOMERS, THEY AFFECT DECISIONS (LOYALTY) (MOVE FROM NEGATIVE TO POSITIVE EMOTIONAL STATE) IDENTIFY AND ADDRESS

EMOTIONS ARE PART OF SERVICE

14) ORGANISATION

ADVANTAGES OF ICT → LOWER TIME TO MARKET, EASIER COLLABORATION (SUPPLIER, CUSTOMER), LOWER DEV COST

EXTREMES OF COLLABORATION — DYADIC BECOMES NETWORKED AT EACH STEP OF PROCESS (OUT-IN, IN-OUT, COUPLED)

FACTORS TO CHOICE OF COLLABORATION → TECH AVAILABILITY IN EXT RESOURCES, TIME TO ACQUIRE OR DEVELOP (BUY IS FASTEST), WHETHER THE TECH CAN BE APPROPRIATED OR IF IT MUST BE SHARED

MAKE VS COOPERATE VS BUY

LEARNING CURVE, COST OF ACQUISITION, FAMILIARITY WITH TECH (LESS ⇒ BUY)

EXAMPLE OF COLLABORATION (5X) → KNOWLEDGE-SHARING SESSIONS
CROSS-FUNCTIONAL TEAMS
INNOVATION CHALLENGES/VACATIONS
(REVERSE) MENTORSHIP
FEEDBACK + RECOGNITION (EMPLOYEE CULTURE TO SHARE IDEAS)
ENCOURAGE SELF LEARNING
FOSS, CROWDSOURCING, STARTUP INCUBATORS
ACQUISITIONS - MERGERS