SOFTWARE PROJECT MANAGEMENT FRAMEWORK

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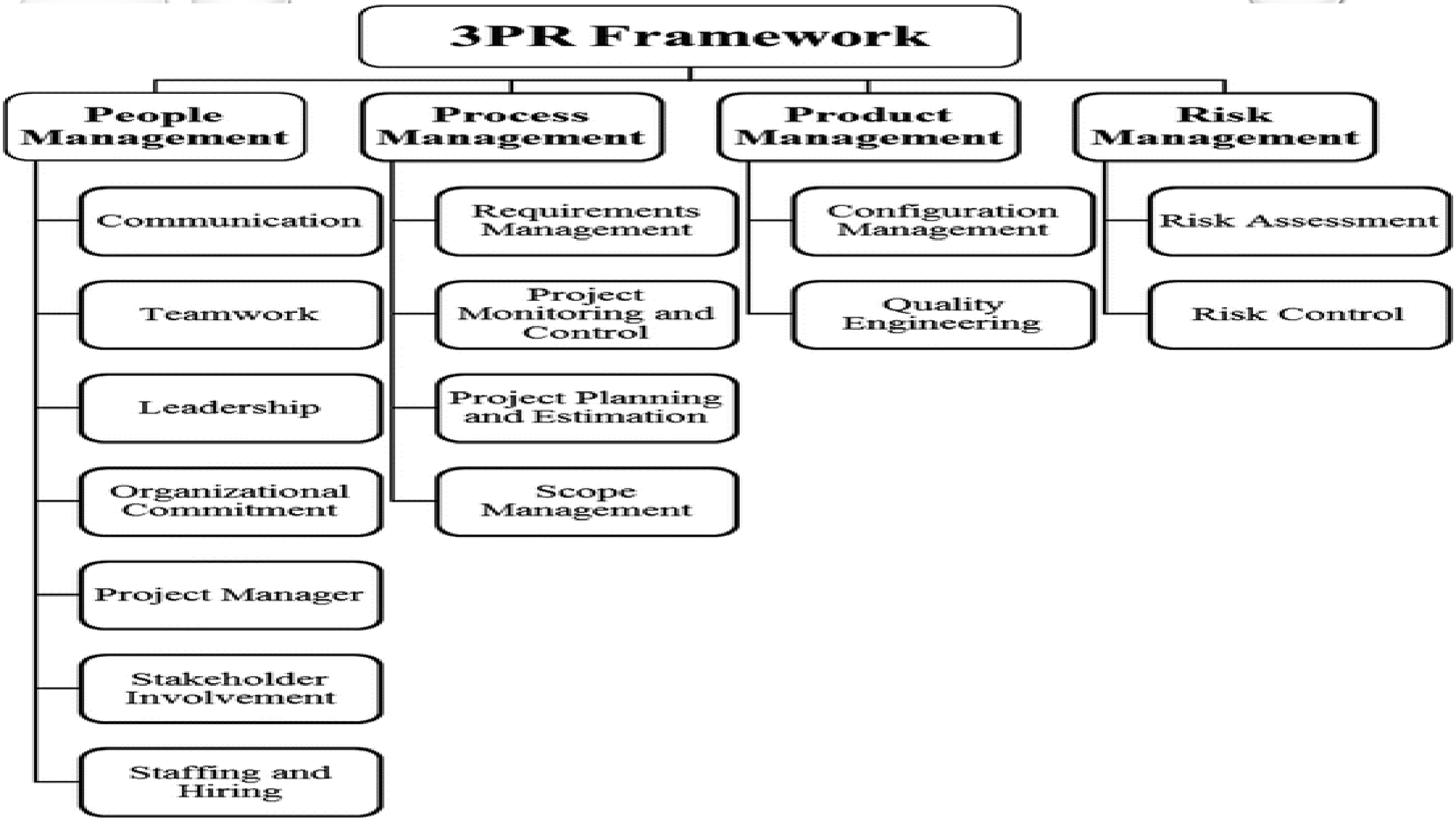
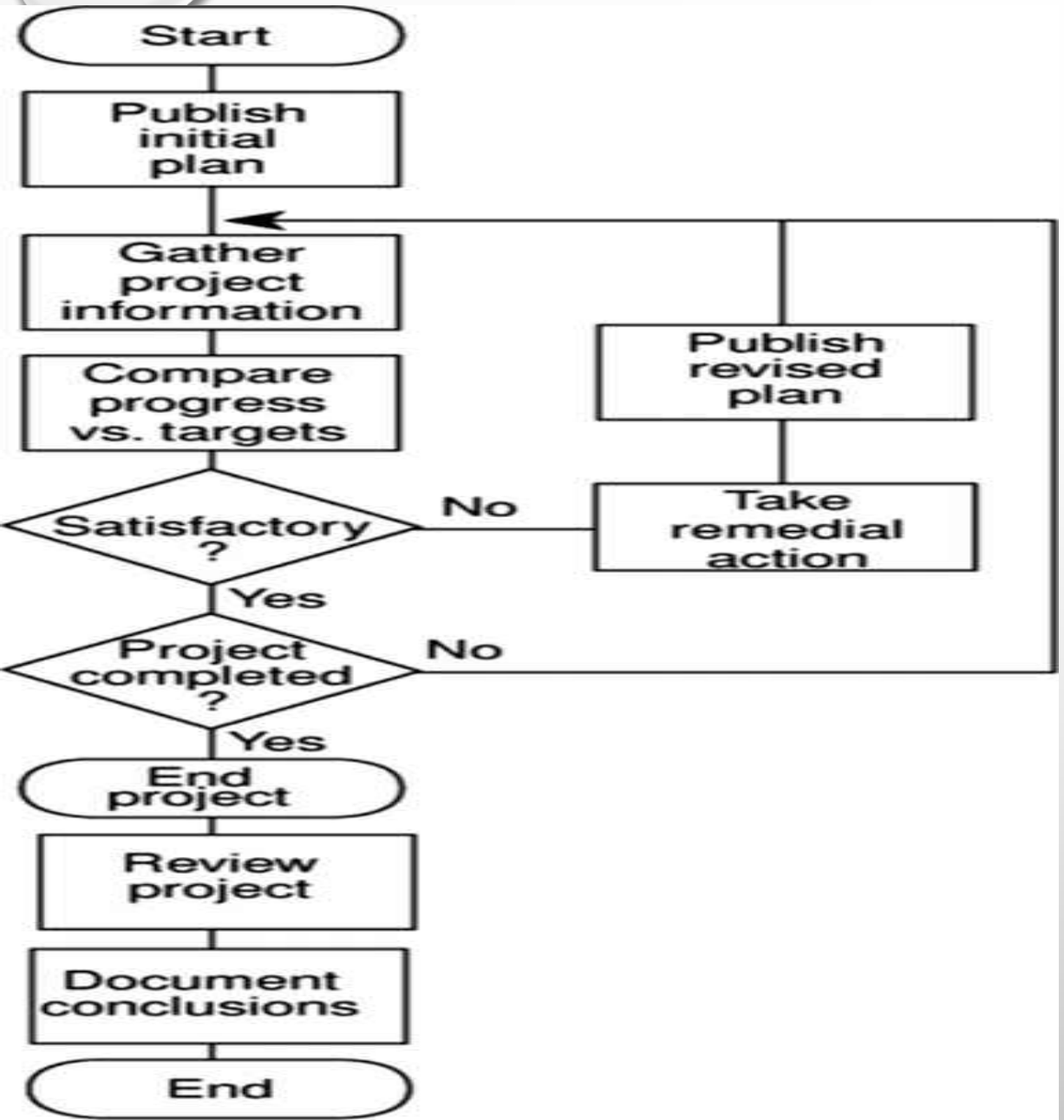
- A PROJECT MANAGEMENT FRAMEWORK CONSISTS OF THE PROCESSES, TASKS, AND TOOLS USED TO TAKE A PROJECT FROM START TO FINISH.
- IT ENCOMPASSES ALL THE KEY COMPONENTS REQUIRED FOR PLANNING, MANAGING, AND GOVERNING PROJECTS.
- THIS IS THE CYCLE A PROJECT GOES THROUGH FROM


3PR Framework
People Management
Process Management
Product Management
Risk Management
Communication
Teamwork
Leadership
Organizational Commitment
Project Manager
Stakeholder Involvement
Staffing and Hiring
Requirements Management
Project Monitoring and Control
Project Planning and Estimation
Scope Management
Configuration Management
Quality Engineering
Risk Assessment
Risk Control

Creating the Framework: Software Project Management



- PROJECT MANAGEMENT IS A DISCIPLINE THAT GOVERNS SKILLS, KNOWLEDGE,
- TOOLS, AND TECHNIQUES THAT CAN HELP IN FULFILLING PROJECT REQUIREMENTS
- TOWARDS SUCCESSFUL SOFTWARE DEVELOPMENT. A PROJECT MANAGEMENT
- FRAMEWORK CONSISTS OF STAKEHOLDERS, KNOWLEDGE AREAS, TOOLS, AND
- TECHNIQUES FOR MANAGING, MONITORING, AND CONTROLLING PROJECTS.

Project Management Framework

Initiation	Planning	Execution	Performance Control	Closure
Project managers work with other concerned stakeholders to evaluate and determine the value and feasibility of the project.	Scope, schedule, budget, resources, and risks are discussed in this phase to develop a perfect project plan.	Project executives follow the developed plan in this stage to keep the development process smoother.	Project execution process gets evaluated in this phase by means of KPIs like project objectives, quality deliverables, cost monitoring, overall project performance, etc.	The promised project deliverables are handed over to the client for validation. A final closure meeting is also held to discuss the overall experience and to close all project accounts.

Q.5: PROJECT MANAGEMENT FRAMEWORK: DEFINITION AND BASIC ELEMENTS

DFINITION

PROJECT MANAGEMENT FRAMEWORK (PM FRAMEWORK) IS A SUBSET OF TASKS, PROCESSES, TOOLS AND TEMPLATES USED IN COMBINATION BY THE MANAGEMENT TEAM TO GET INSIGHT INTO THE MAJOR STRUCTURAL ELEMENTS OF THE PROJECT IN ORDER TO INITIATE, PLAN, EXECUTE, CONTROL, MONITOR, AND TERMINATE THE PROJECT ACTIVITIES THROUGHOUT THE MANAGEMENT LIFE-CYCLE.

PM FRAMEWORK ALLOWS USING VARIOUS METHODOLOGIES AND APPROACHES TO PLAN AND SCHEDULE THE MAJOR PHASES OF THE LIFE-CYCLE.

BASIC ELEMENTS

- CREATE A DETAILED DESCRIPTION OF THE PROJECT FRAMEWORK TO ALLOW INDIVIDUALS AND GROUPS INVOLVED IN THEIR PROJECTS TO REVIEW THE CONTENT OF THE FRAMEWORK AND INVESTIGATE ITS BASIC ELEMENTS.
- FOLLOWING PROJECT MANAGEMENT BEST PRACTICES, WE MADE A DESCRIPTION OF PM FRAMEWORK SHOWING THE ELEMENTS IN HIERARCHICAL ORDER.

THERE ARE SEVERAL BASIC ELEMENTS:

- INITIATION.
- PLANNING.
- EXECUTION.
- CONTROL.
- CLOSURE.

THE PURPOSE OF PM FRAMEWORK IS TO:

- SIMPLIFY AND ASSIST WITH SHARING INFORMATION ON PROJECT MANAGEMENT BEST PRACTICES, APPROACHES, TOOLS, TEMPLATES AND SAMPLES.
- CREATE AND SHARE AN UNDERSTANDING OF THE BEST PRACTICES FOR PLANNING & MANAGEMENT FOR ALL TYPES AND KINDS OF PROJECT, INCLUDING IT PROJECTS, CONSTRUCTION PROJECTS, ETC.
- IMPROVE THE LEVEL OF COMPETENCE
- CONTRIBUTE TO SETTING COMMON STANDARDS AND REQUIREMENTS FOR VARIOUS PROJECTS AND

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- CONTRIBUTE TO SETTING COMMON STANDARDS AND REQUIREMENTS FOR VARIOUS PROJECTS AND ESTABLISHING COMMON TERMINOLOGY.

FOR EXAMPLE,

- YOU WANT TO BUILD A HOUSE. HOUSE BUILDING WILL YOUR PROJECT. FIRST, YOU NEED TO CREATE A DRAFT OF THE HOUSE AND OUTLINE THE STRUCTURE INCLUDING WALLS, CEILING, FLOOR, DOORS, AND SO ON.
- THEN YOU NEED TO ACQUIRE TOOLS AND MATERIALS AS WELL AS HIRE WORKERS WHO WILL DO YOUR PROJECT AND CONSTRUCT THE HOUSE. IN THIS PARTICULAR CASE, THE FRAMEWORK OF YOUR PROJECT WILL BE THE DRAFT, ALL THE RESOURCES YOU ARE GOING TO UTILIZE FOR BUILDING THE HOUSE, AND ALL YOUR PLANS AND EXPECTATIONS.

HERE IS THE MAIN DIFFERENCE BETWEEN A METHODOLOGY AND A FRAMEWORK:

- **A FRAMEWORK** PROVIDES STRUCTURE AND DIRECTION ON A PREFERRED WAY TO DO SOMETHING, WITHOUT BEING TOO DETAILED OR RIGID.
- THEY PROVIDE GUIDANCE WHILE BEING FLEXIBLE ENOUGH TO ADAPT TO CHANGING CONDITIONS OR TO BE CUSTOMIZED FOR YOUR COMPANY WHILE UTILIZING VETTED APPROACHES.

- **A METHODOLOGY** IS AN APPROACH TO DOING SOMETHING WITH A DEFINED SET OF RULES, METHODS, TESTS ACTIVITIES, DELIVERABLES, AND PROCESSES WHICH TYPICALLY SERVES TO SOLVE A SPECIFIC PROBLEM.
- METHODOLOGIES DEMONSTRATE A WELL THOUGHT OUT, DEFINED, REPEATABLE APPROACH.

HOW TO CHOOSE A PROJECT MANAGEMENT FRAMEWORK

- LOOK AT PROJECT SCOPE AND SIZE. PROJECTS COME IN ALL SHAPES AND SIZES.
- SHORTLIST POTENTIAL METHODOLOGIES. AS YOU IDENTIFY METHODOLOGIES THAT COULD BE SUITABLE, KEEP TRACK OF THEM USING A SPREADSHEET OR OTHER TOOL.
- GET TEAM BUY-IN.
- VERIFY THE FIT.

HOW DO I CHOOSE A PROJECT MANAGEMENT METHODOLOGY?

- SELECTING THE RIGHT PROJECT MANAGEMENT METHOD
- PROJECT FOCUS (E.G. TASK ACTIVITIES VERSUS FINAL PRODUCT)
- CUSTOMER AND STAKEHOLDER INVOLVEMENT.
- INDUSTRY.
- FLEXIBILITY OF TIMELINE.
- ALLOTTED BUDGET.
- NUMBER AND TYPE OF TEAMS WORKING ON THE PROJECT.
- COMPLEXITY OF PROJECTS.
- RESOURCES NEEDED VERSUS RESOURCES AVAILABLE.

WHAT ARE THE 10 KNOWLEDGE AREAS OF PROJECT MANAGEMENT?

- THE KNOWLEDGE AREAS ARE THE CORE TECHNICAL SUBJECT MATTER, WHICH ARE NECESSARY FOR EFFECTIVE PROJECT MANAGEMENT.
  - PROJECT INTEGRATION MANAGEMENT.
  - PROJECT SCOPE MANAGEMENT.
  - PROJECT TIME MANAGEMENT.
  - PROJECT COST MANAGEMENT.

- PROJECT QUALITY MANAGEMENT.
- PROJECT HUMAN RESOURCE MANAGEMENT.
- PROJECT COMMUNICATIONS MANAGEMENT.

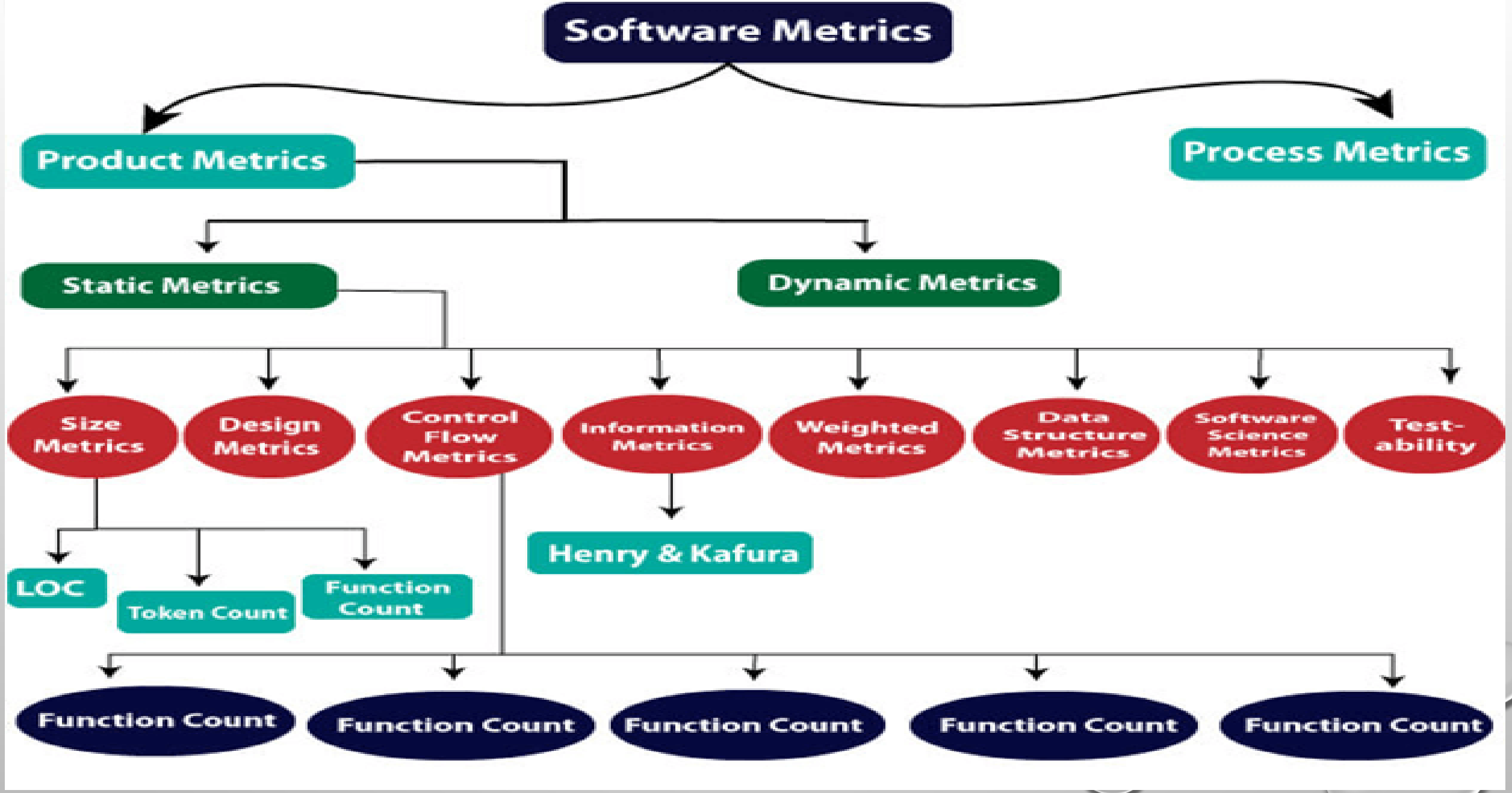
SOFTWARRE MATRIC

- A SOFTWARE METRIC IS A MEASURE OF SOFTWARE CHARACTERISTICS WHICH ARE MEASURABLE OR COUNTABLE.
- SOFTWARE METRICS ARE VALUABLE FOR MANY REASONS, INCLUDING MEASURING SOFTWARE PERFORMANCE, PLANNING WORK ITEMS, MEASURING PRODUCTIVITY, AND MANY OTHER USES.

IN SOFTWARE ENGINEERING:

- A SOFTWARE METRIC IS A STANDARD OF MEASURE OF A DEGREE TO WHICH A SOFTWARE SYSTEM OR PROCESS POSSESSES SOME PROPERTY.
- EVEN IF A METRIC IS NOT A MEASUREMENT (METRICS ARE FUNCTIONS, WHILE MEASUREMENTS ARE THE NUMBERS OBTAINED BY THE APPLICATION OF METRICS), OFTEN THE TWO TERMS ARE USED AS SYNONYMS.

Classification of Software Metrics



THERE ARE 2 TYPES OF SOFTWARE METRICS:

- **PRODUCT METRICS**: PRODUCT METRICS ARE USED TO EVALUATE THE STATE OF THE PRODUCT, TRACING RISKS AND UNDERCOVERING PROSPECTIVE PROBLEM AREAS.
- **PROCESS METRICS**: PROCESS METRICS PAY PARTICULAR ATTENTION ON ENHANCING THE LONG TERM PROCESS OF THE TEAM OR ORGANISATION.

HOW IS SOFTWARE COST CALCULATED?

GIVEN SOME STEPS TO BETTER SOFTWARE ESTIMATION

- INVOLVE BUSINESS STAKEHOLDERS IN THE **SOFTWARE** ESTIMATION PROCESS.
- ASK, “WHY DO MOST **SOFTWARE** ESTIMATION PROJECTS FAIL?”
- BREAK THE REQUIREMENTS DOWN TO INCREASE TRANSPARENCY IN **SOFTWARE** ESTIMATION.
- TIE THE **ESTIMATE** TO REALITY.
- BUILD THE RIGHT TEAM.
- REMEMBER WHY THE PRODUCT OWNER MATTERS.