Programming

Our job is to transform poorly understood and rapidly changing needs into precise machine instructions.

When we really know what is needed, we can build it.

When we think we know, we are wrong.

Then we must experiment.

We must get expert feedback on the experiment.

Then, when the experts agree that we really know, we build it.
Track and Report

Businesses run on schedules and commitments.
Our customers and managers must know the status of our work.
To accurately report on status, we must measure status.
To measure status, we must have measurable plans.

Plan Every Project

Never make a commitment without a plan.
The people who do the work make the plan.
If you can’t plan accurately, plan often.
Plan what you know and plan at a level that fits the job.
If the plan doesn’t fit the work, revise the plan.
Base plans on historical data.
To have comparable data, you must have similar plans.
To make similar plans, you must have similar processes.
Use a Measured Process

To measure your work, you must define its measures.
To define the measures, you must know the job steps.
Tailor the process to fit the work.
For different kinds of work, use different processes.
When the process doesn’t fit the job, change the process.
Use the process to measure, plan, and track the work.

Design Before You Build

A design principle
• When the architects build it, it falls down.
• When the engineers build it, they tear it down.
Start with the best requirements you can get.
Recognize that the requirements will change throughout the job.
Take small steps.
Design what you know.
Explore what you don’t know.
When you know enough, design and build it.
Quality is the Top Priority

If it didn't have to work, you could build it pretty quickly.

It is always fastest to do the job right the first time.

Rework and repair is wasteful.

The sooner you fix it the better.

Focus on quality from the beginning of the job.

Quality without numbers is just talk.

The Best Projects

The best projects are an artful balance of conflicting forces.

They must consider
• business needs
• technical capability
• customer desires

If any facet is slighted, product quality will suffer.

To build superior products, teams must understand the complete context for their projects.
The Best Teams

The best teams
- define their own processes
- produce their own plans
- make their own commitments
- direct their own projects
- consistently use their selected methods
- develop the best products

The Team Software Process (TSP)
- builds self-directed teams;
- guides these teams in producing superior products

Using The TSP

The TSP builds teams.

TSP teams first plan the entire project.

They make more detailed plans for the next few weeks or months.

If needed, TSP teams revise and refine their plans every week.
The TSP Launch Process

Day 1
1. Establish project and team goals
2. Assign roles and define team goals
3. Produce development strategy and process

Day 2
4. Build traps and develop plans
5. Develop the quality plan
6. Subtract defect- and consolidated plans

Day 3
7. Conduct risk assessment

Day 4
8. Prepare management and launch report
9. Hold management meeting

A qualified TSP coach guides the team through a defined process to develop its plan and to negotiate that plan with management.

The Team Plan
TSP team members estimate their personal task hours for each week.

They produce the overall team schedule.

With personal and TSP defect data, they estimate the yields and defects for each process step.

They make and balance personal plans for the next few weeks.

They produce a project risk assessment.

They negotiate the team plan with management.
Business Needs

We all work for organizations. These organizations require plans. Unless engineers are independently wealthy, they must work to schedules. If they don't make their own schedules, somebody else will. Then that person will control their work.
Controlling Your Own Destiny

To control the way they work, engineers must plan their projects.

For management to trust these plans, the engineers must make accurate plans.

To make accurate plans, they must have data.

To have data, they must follow a defined and measured process.

Defining Your Own Process

With the PSP and TSP, engineering teams define the process that best fits their projects.

The TSP guides teams in defining, planning, and measuring their plans and processes.

When teams use the TSP, they consistently meet their commitments with quality products.

When teams do not consistently meet their commitments, they do not have credibility.

Without credibility, engineering teams cannot manage their own work.