

SEMAT

Position Summary

Watts S. Humphrey

Software Engineering Institute

Carnegie Mellon University



The Software Problem

Software projects have consistently failed, and the largest fail the most often.

Every study has concluded that the cause is poor management; technical issues are rarely to blame.

The problem is *management* and not *managers*.

Until we fix these management “details”, our field cannot truly advance.

Like surgery, until doctors learned to keep patients from dying, advanced surgical methods were pointless.



The Management Problem

Software is hard to manage because it is knowledge work.

Peter Drucker said that managers can't manage knowledge work; the knowledge workers must manage themselves.

Today, software professionals do not know how to manage themselves.

When they are properly trained and do manage themselves, the results are extraordinary.



**Carnegie Mellon
Software Engineering Institute**

Organizations Using TSP



Advanced Information Services, Inc.
Centro De Investigacion En Matematicas
Chinasoft International, Inc.
COmputing TechnologieS, Inc.
Davis Systems
DEK International GmbH
Delaware Software, S.A. de C.V.
Delivery Excellence
Grupo Empresarial Eisei, S.A. de C.V.
Herbert Consulting
Hitachi Software Engineering Co., Ltd.
Idea Entity Corp.
InnerWorkings, Inc.
Instituto Tecnológico y de Estudios Superiores de Monterrey
It Era S,A, de C.,V.
Kernel Technologies Group, S.A. de CV

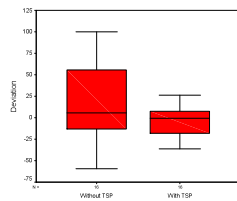
Knowledge Partner QR Pvt. Ltd.
Kyushu Institute of Technology
L. G. Electronics
LogiCare
Motiva, LLC
National Aeronautics & Space Administration
Next Process Institute Ltd.
Praxis High Integrity Systems
Process & Project Health Services
Procesix
PS&J Consulting - Software Six Sigma
QuarkSoft
Sandia National Laboratories
Science Applications International Corporation (SAIC)
Siemens AG

SILAC Ingenieria de Software S.A. de C.V.
SKIZCorp Technology
Software Engineering Competence Center (SECC)
Software Park Thailand
STPP, Inc.
TOWA INTEGRADADORA S.A. de C.V.
TRX
Universidad Autonoma De Zacatecas
Universidad de Monterrey
Universidad Regiomotana A.C.
University of Aizu
U.S. Air Force (CRSIP/STSC)
U.S. Census Bureau
U.S. Navy Air Systems Command (NAVAIR)
U.S. Naval Oceanographic Office (NAVO)

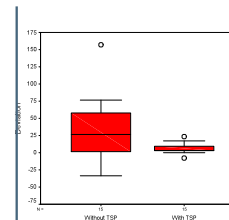


Cost and Schedule Performance

With timely and precise data, TSP teams can manage their schedule performance.



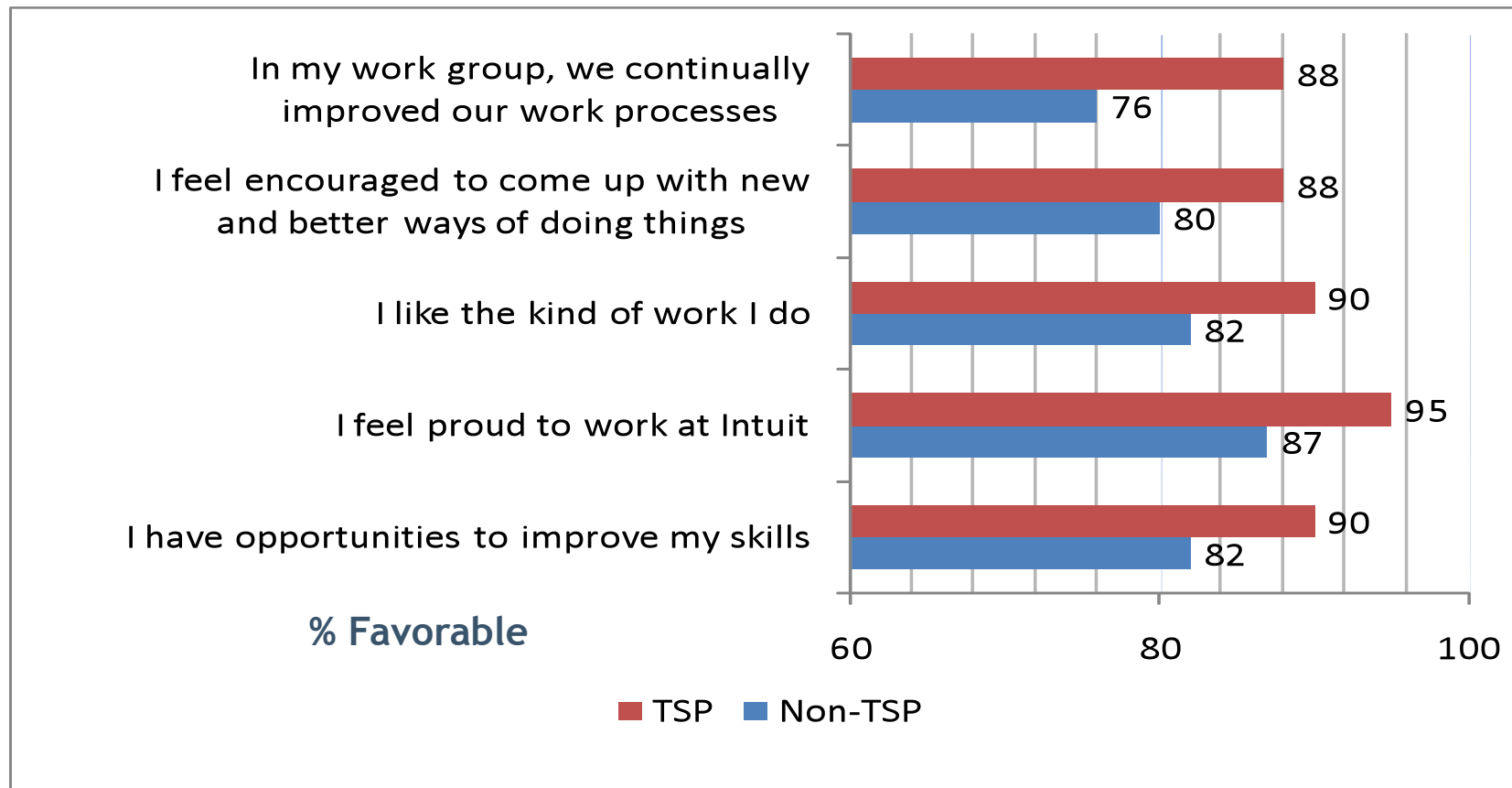
Effort



Schedule



Developers Like the TSP*



Engineers love it... Once they adopt it they can't imagine going back

* Intuit TSP Survey Results



Self Management

The basic elements of self management are to

- use a defined process
- plan the work
- measure and track the work
- manage quality
- regularly report status

These practices can be taught in one full-time week.

To actually use these practices, however, software professionals must work on coached teams or follow self-management disciplines throughout their education.



Results

Self-management disciplines are needed to provide the information needed for the SEMAT initiative.

Once these disciplines are routinely taught, the software profession will be able to develop as an engineering and scientific discipline.

Then we should be able to achieve the technical advances that we can only dream about today.