



Carnegie Mellon
Software Engineering Institute

Process Maturity Profile

Software CMM[®] 2005 Mid-Year Update

September 2005

We could not produce this report without the support of the organizations and lead appraisers who reported their appraisal results to the SEISM.

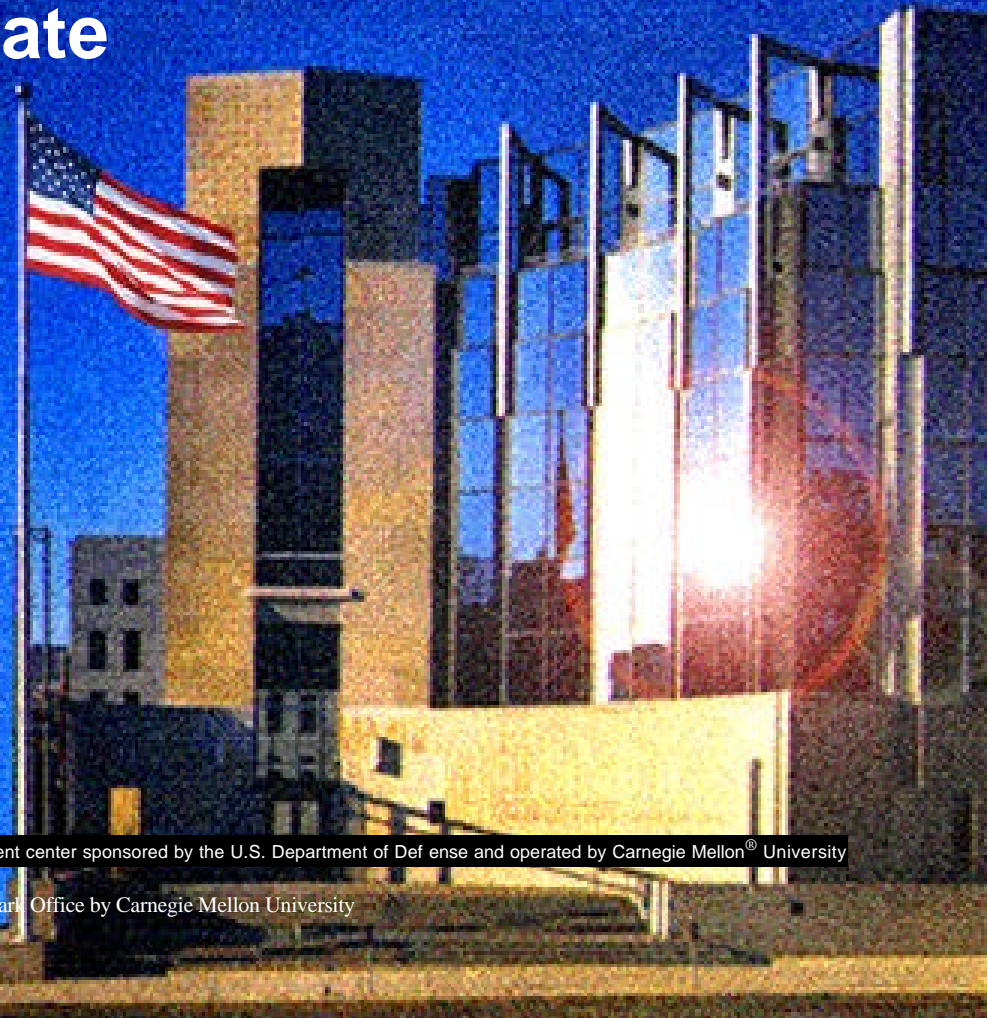
Our many thanks for their continuing cooperation with our data collection and analysis efforts.

CMMI Appraisal Program

The Software Engineering Institute is a federally funded research and development center sponsored by the U.S. Department of Defense and operated by Carnegie Mellon[®] University

® CMM and Carnegie Mellon are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University
SM SEI is a service mark of Carnegie Mellon University

© 2005 by Carnegie Mellon University





Outline

Introduction

Current Status

Community Trends

Organizational Trends

Summary

This briefing is based solely on the number of appraisals reported to the SEI. It cannot be used as a source for an exact indicator of all organizations in the world using SEI models or appraisal methods nor can it be used for certification or verification purposes.

The SEI does not certify organizations. The SEI only licenses SEI partners and SEI authorized lead assessors to conduct appraisals. Neither the SEI nor any other organization is a “certifying authority” of the results from an appraisal. Therefore requests to the SEI to provide information to be used for this purpose can not be fulfilled. Information provided by the SEI, such as this briefing, is to demonstrate use of its products and services only.

Organizations performing source selection or verification should consider performing an evaluation appraisal. For more information on appraisal methods and for a directory of authorized lead appraisers who can perform them, visit:
<http://www.sei.cmu.edu/appraisal-program/>



Introduction - 1: Purpose and Source

Characterize the process maturity of the software community

This briefing uses information from appraisals using the SW-CMM in:

- **CMM[®]-Based Appraisals for Internal Process Improvement (CBA IPIs) and**
- **Software Process Assessments (SPAs) and**
- **Standard CMMI[®] Appraisal Method for Process Improvement (SCAMPISM), v1.1**

Please visit:

<http://www.sei.cmu.edu/appraisal-program/profile/about.html>

for additional information or to answer questions you may have about this briefing



Introduction - 2: Briefing Contents

This briefing includes three primary sections:

1. Current Status

- Snapshot of the software community based on the most recent appraisal, since 2001, of reporting organizations

2. Community Trends

- Global distribution of appraisals
- Growth in the number of appraisals performed
- Shifts in the maturity profile over time

3. Organizational Trends

- Analysis of Key Process Area (KPA) satisfaction
- Time to move up in maturity based on change in maturity level and time between appraisals



Section 1: Current Status

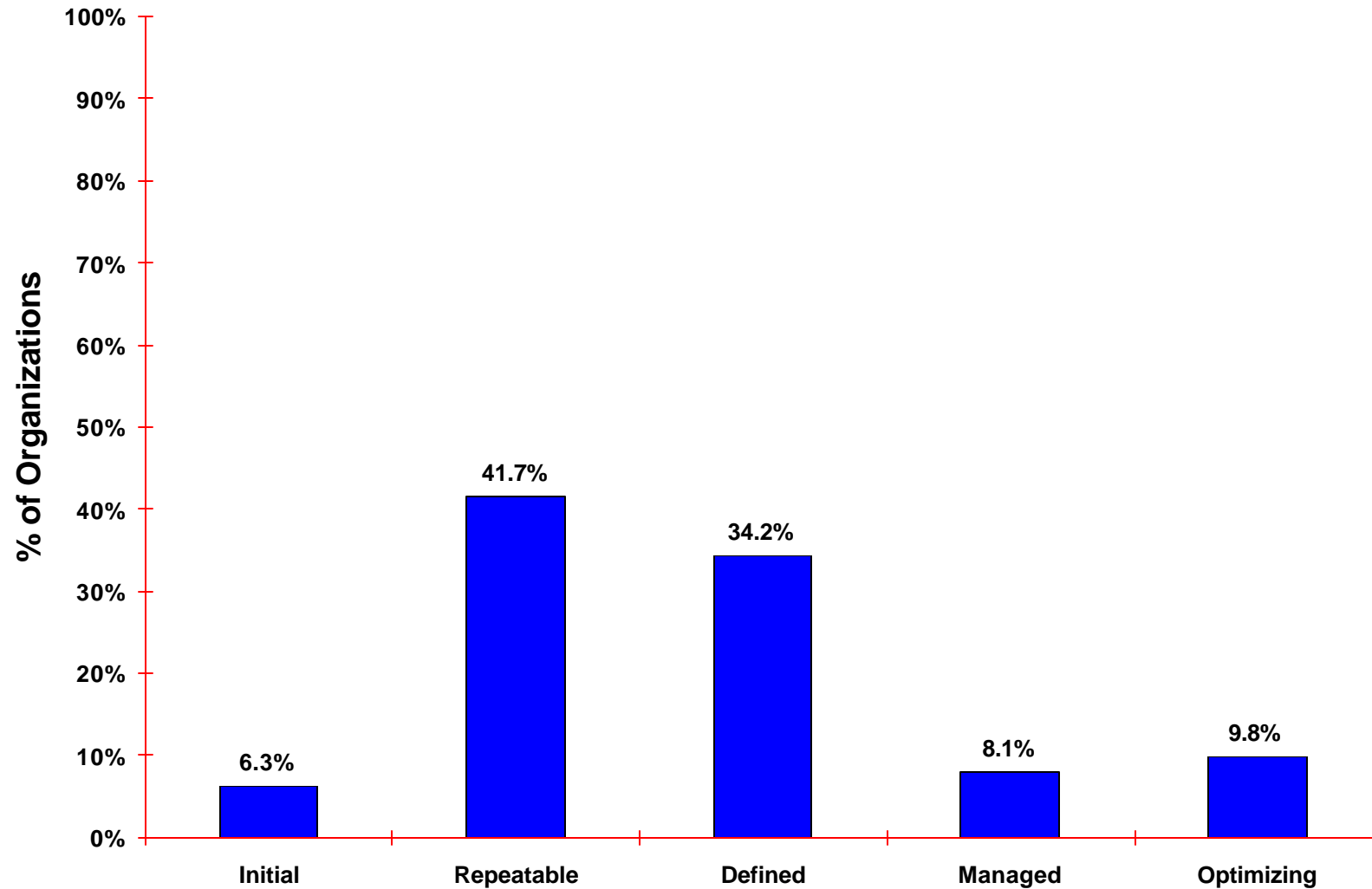
**Appraisals conducted from 2001 through June 2005
and reported to the SEI by July 2005**

- **1,613 organizations**
- **860 participating companies**
- **7,991 projects**
- **65.3% Non-USA organizations**

Please refer to: Terms Used in this Report on page 29



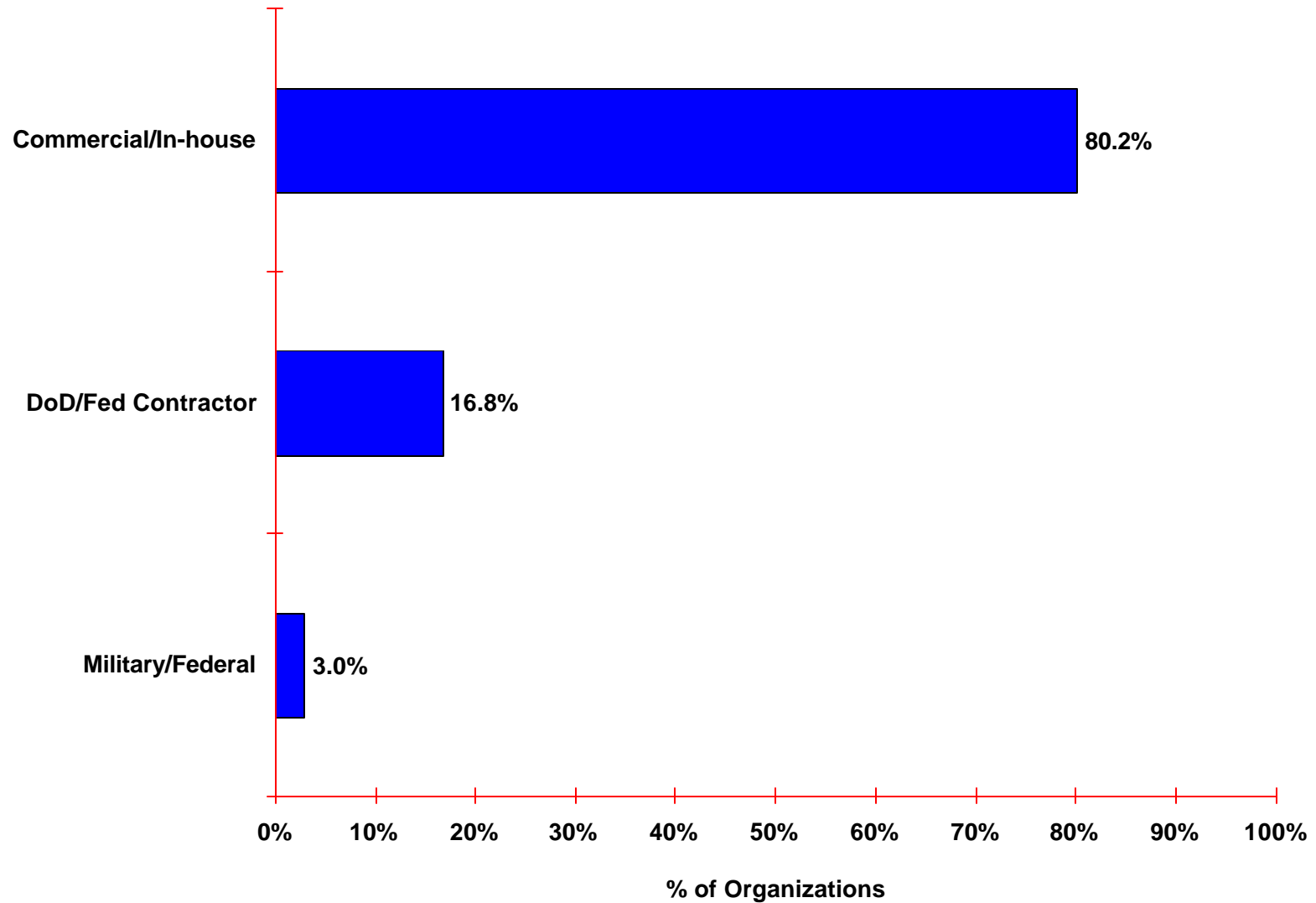
Maturity Profile by All Reporting Organizations



Based on most recent appraisal, since **2001**, of **1,613** organizations reporting a maturity level rating



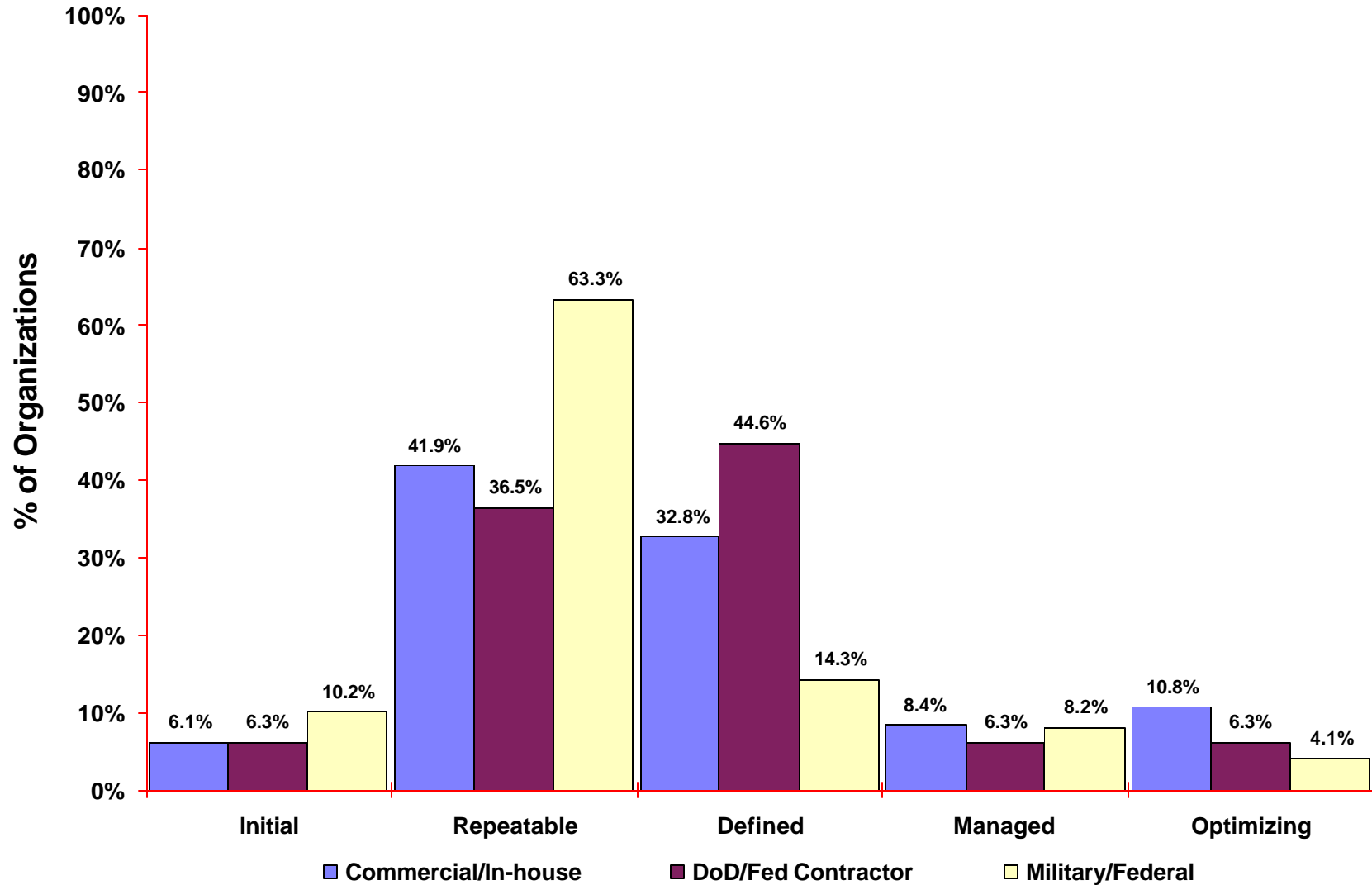
Reporting Organization Categories



Based on 1,613 organizations reporting organization categories



Maturity Profile by Reporting Organization Categories

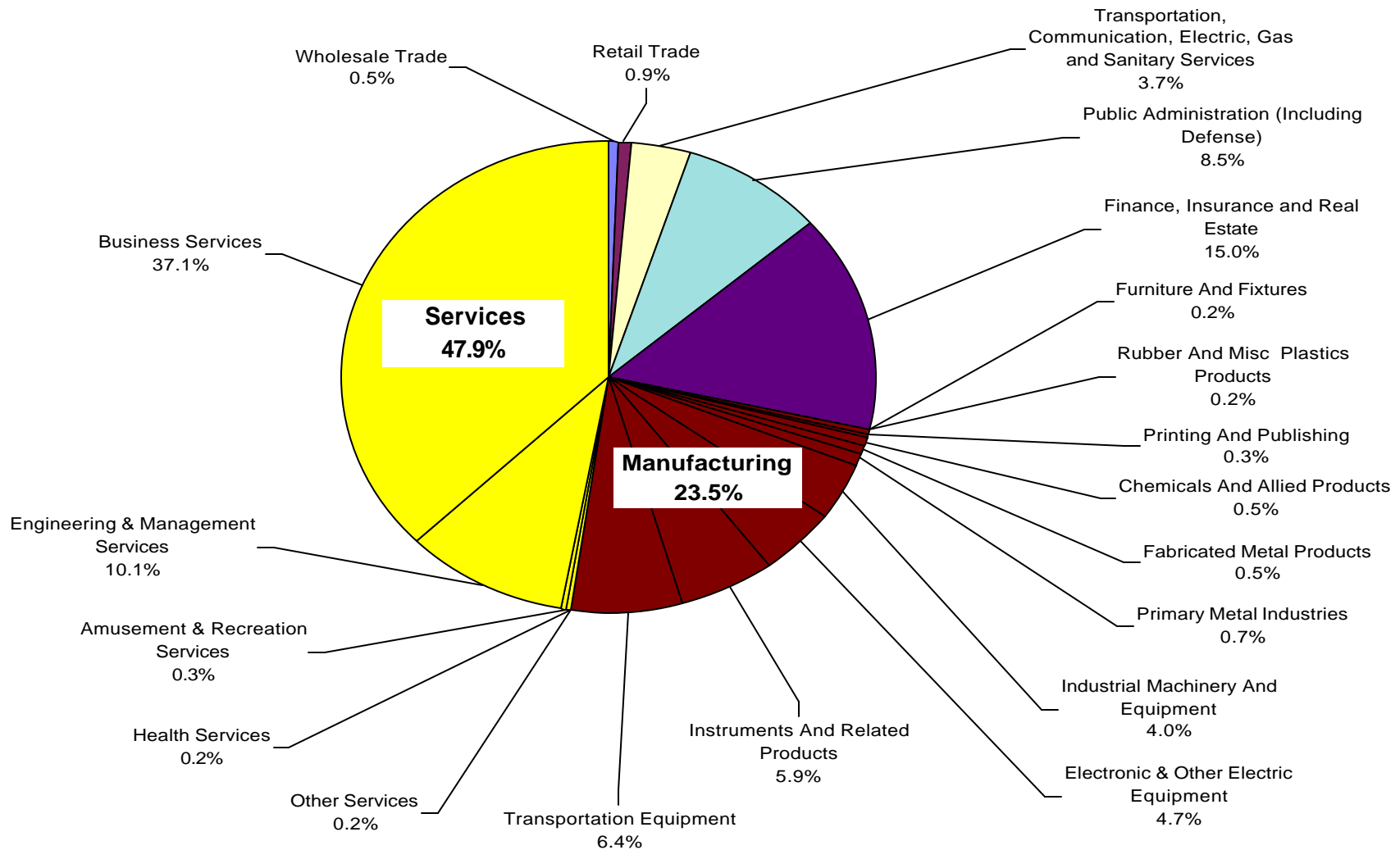


Based on most recent appraisal, since 2001, of 1,613 organizations reporting categories and a maturity level rating



Organization Type

Based on Primary Standard Industrial Classification (SIC) Code

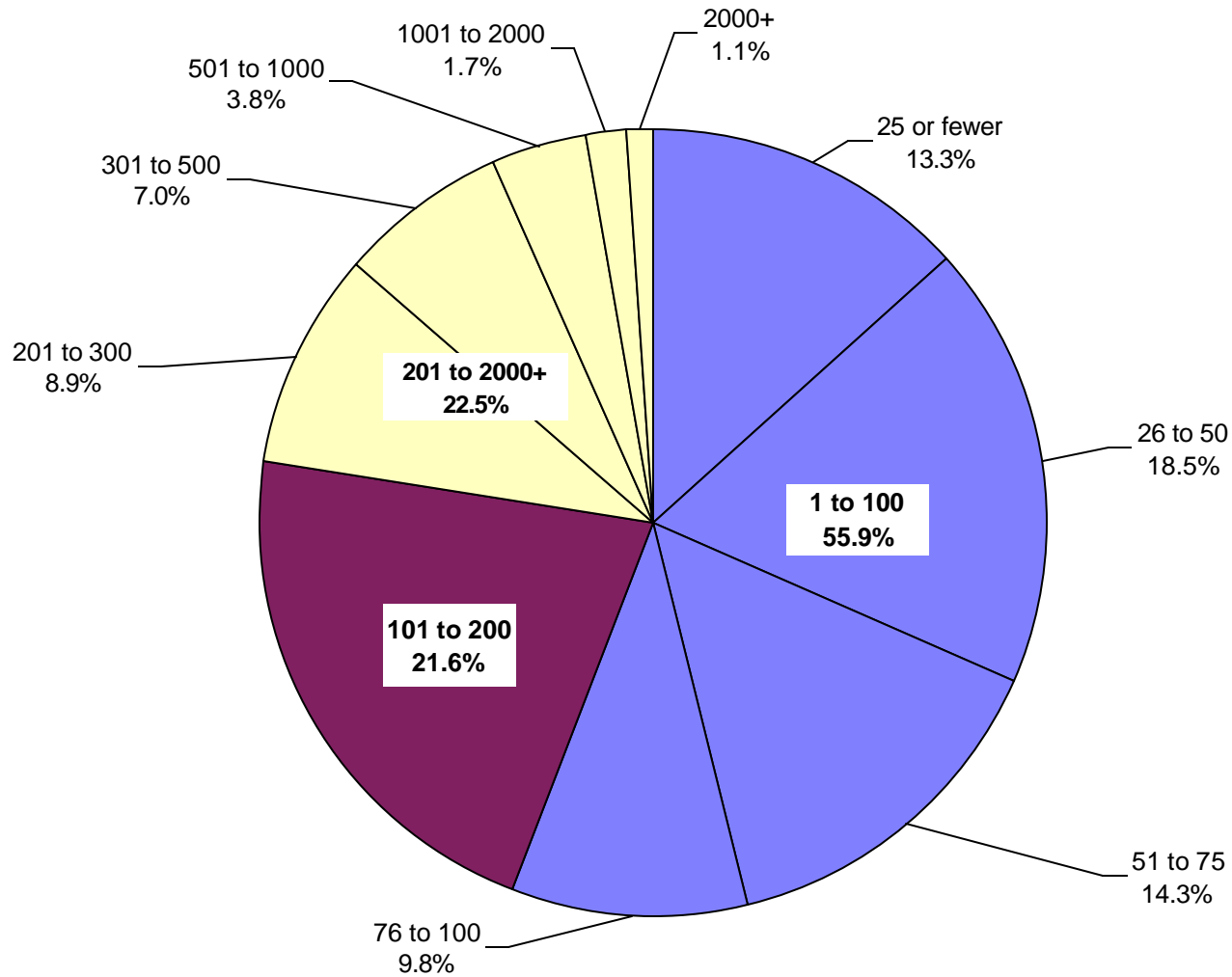


Based on 574 organizations reporting SIC code. For more information visit: <http://www.osha.gov/oshstats/sicser.html>



Organization Size

Based on the total number of employees within the area of the organization that was appraised

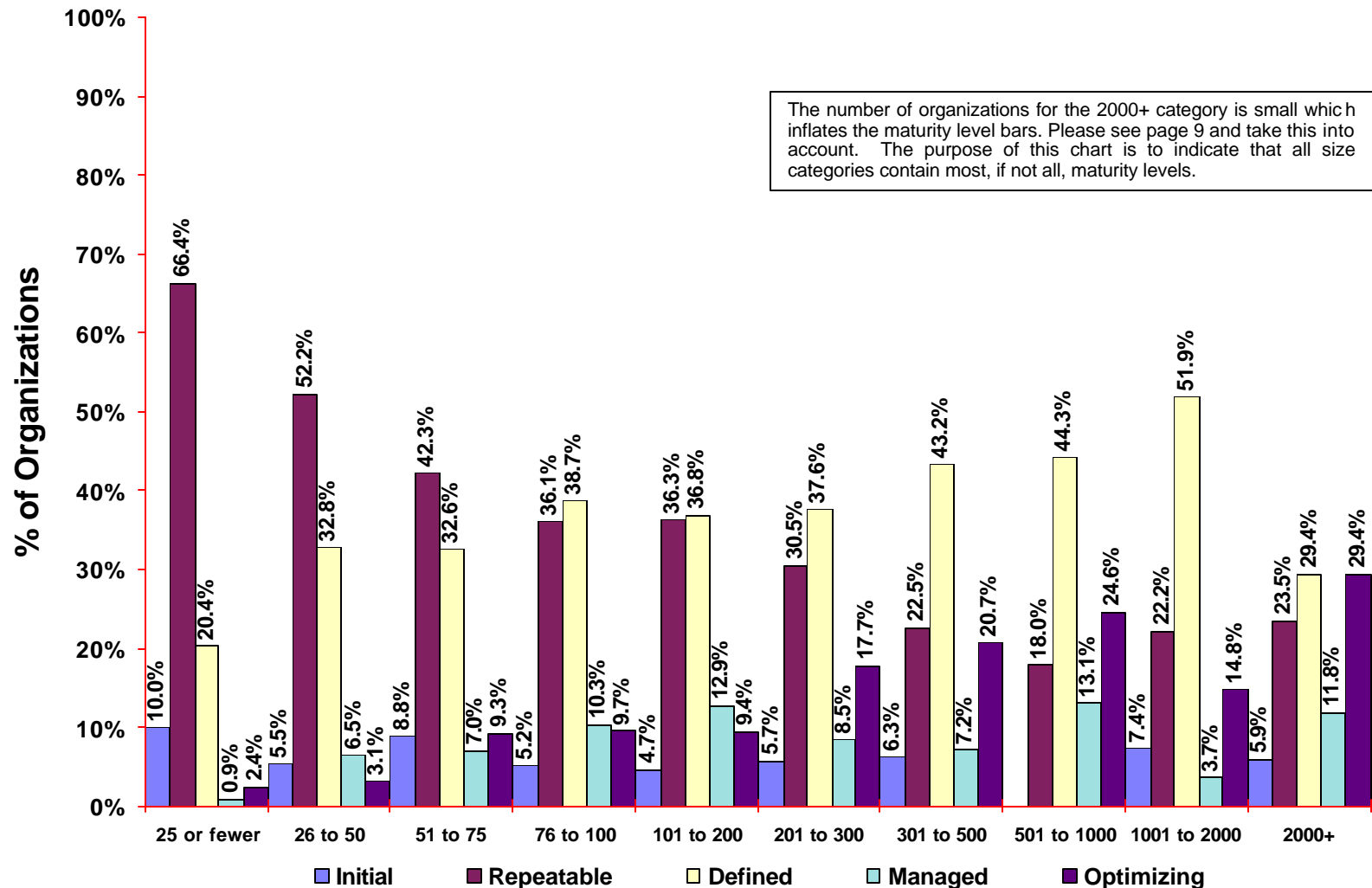


Based on **1,585** organizations reporting size data



Maturity Profile by Organization Size

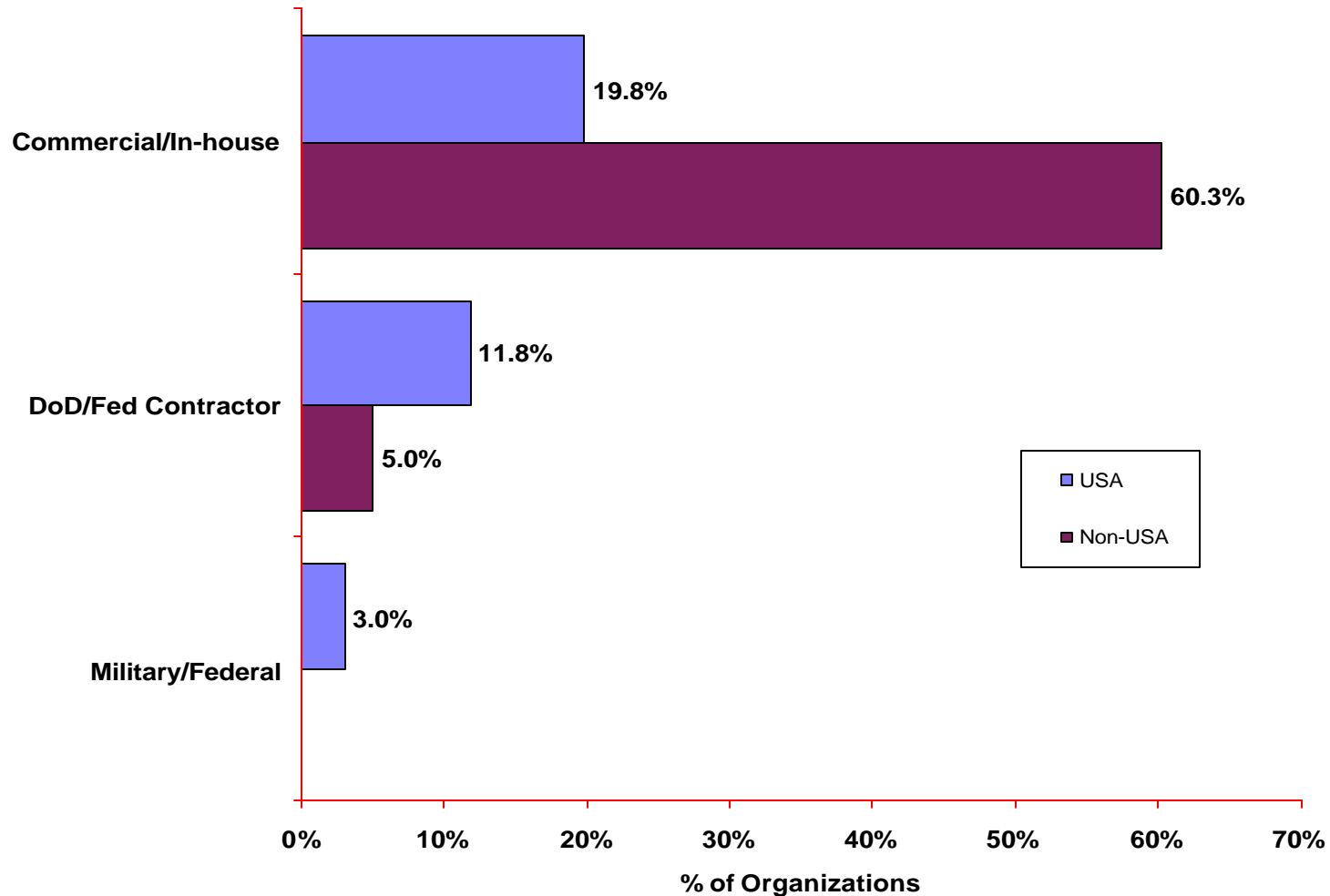
Based on the total number of employees within the area of the organization that was appraised



Based on 1,585 organizations reporting size data and a maturity level rating



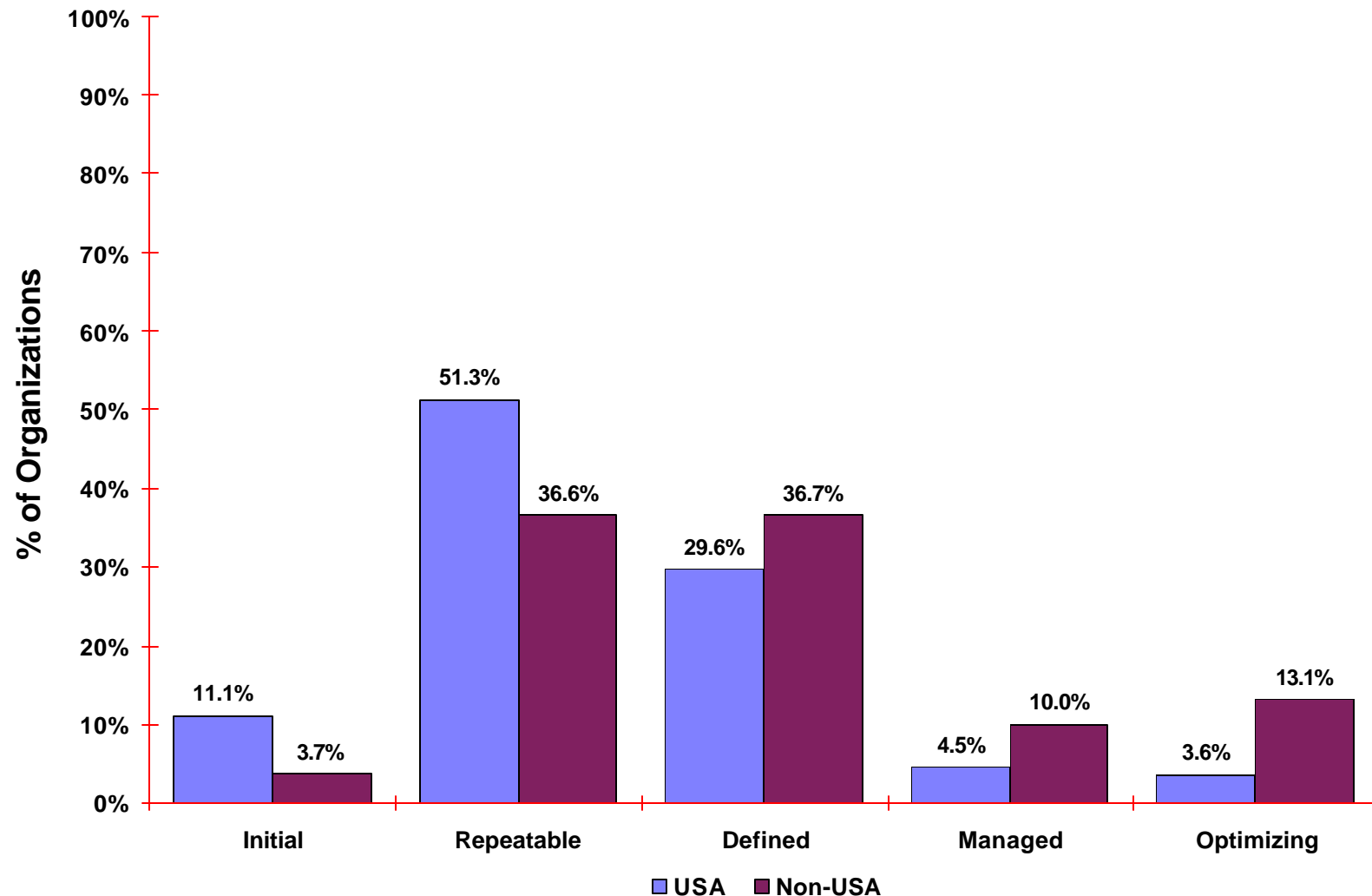
USA and Non-USA Reporting Organization Categories



Based on **560** U.S. organizations and **1053** Non-USA organizations reporting organization categories



Maturity Profile by All Reporting USA and Non-USA Organizations



Based on **560** U.S. organizations and **1053** Non-USA organizations reporting categories and a maturity level rating



Section 2: Community Trends

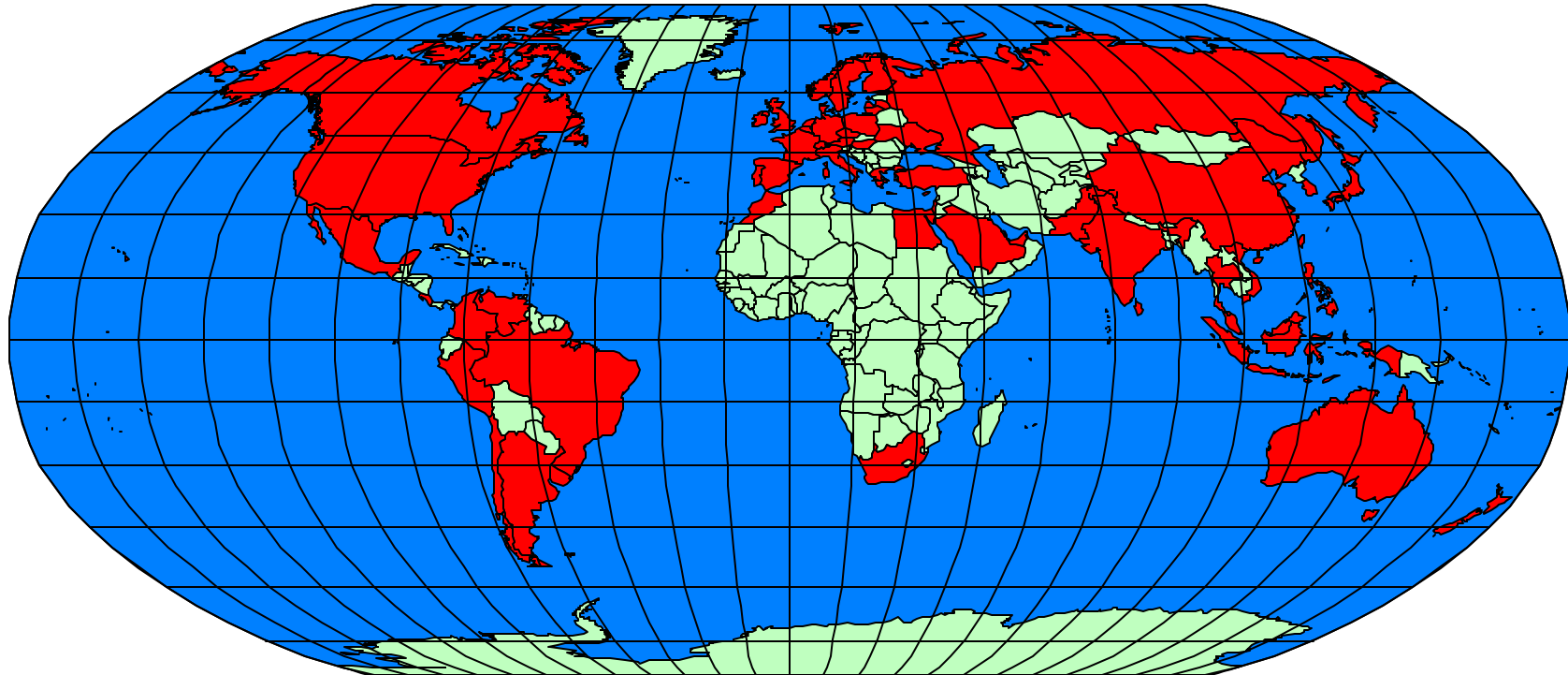
CBA IPIs , SPAs and SCAMPI v1.1 using the SW-CMM conducted since 1987 through June 2005 and reported to the SEI by July 2005

- **3,728 appraisals**
 - 3,151 CBA IPIs**
 - 484 SPAs**
 - 93 SCAMPIs**
- **2,859 organizations**
- **1,107 participating companies**
- **685 reappraised organizations**
- **15,634 projects**

Please refer to: Terms Used in this Report on page 29



Countries Where Appraisals have been Performed and Reported to the SEI



- | | | | | | | |
|----------------|---------------|--------------|------------|--------------|----------------|----------------------|
| Argentina | Australia | Austria | Barbados | Belgium | Brazil | Canada |
| Chile | China | Colombia | Costa Rica | Cyprus | Czech Republic | Denmark |
| Egypt | Finland | France | Germany | Greece | Hong Kong | Hungary |
| India | Indonesia | Ireland | Israel | Italy | Japan | Korea, Republic of |
| Latvia | Lithuania | Malaysia | Mauritius | Mexico | Morocco | Netherlands |
| New Zealand | Norway | Pakistan | Peru | Philippines | Poland | Portugal |
| Puerto Rico | Russia | Saudi Arabia | Singapore | South Africa | Spain | Sri Lanka |
| Sweden | Switzerland | Taiwan | Thailand | Turkey | Ukraine | United Arab Emirates |
| United Kingdom | United States | Uruguay | Venezuela | Vietnam | | |



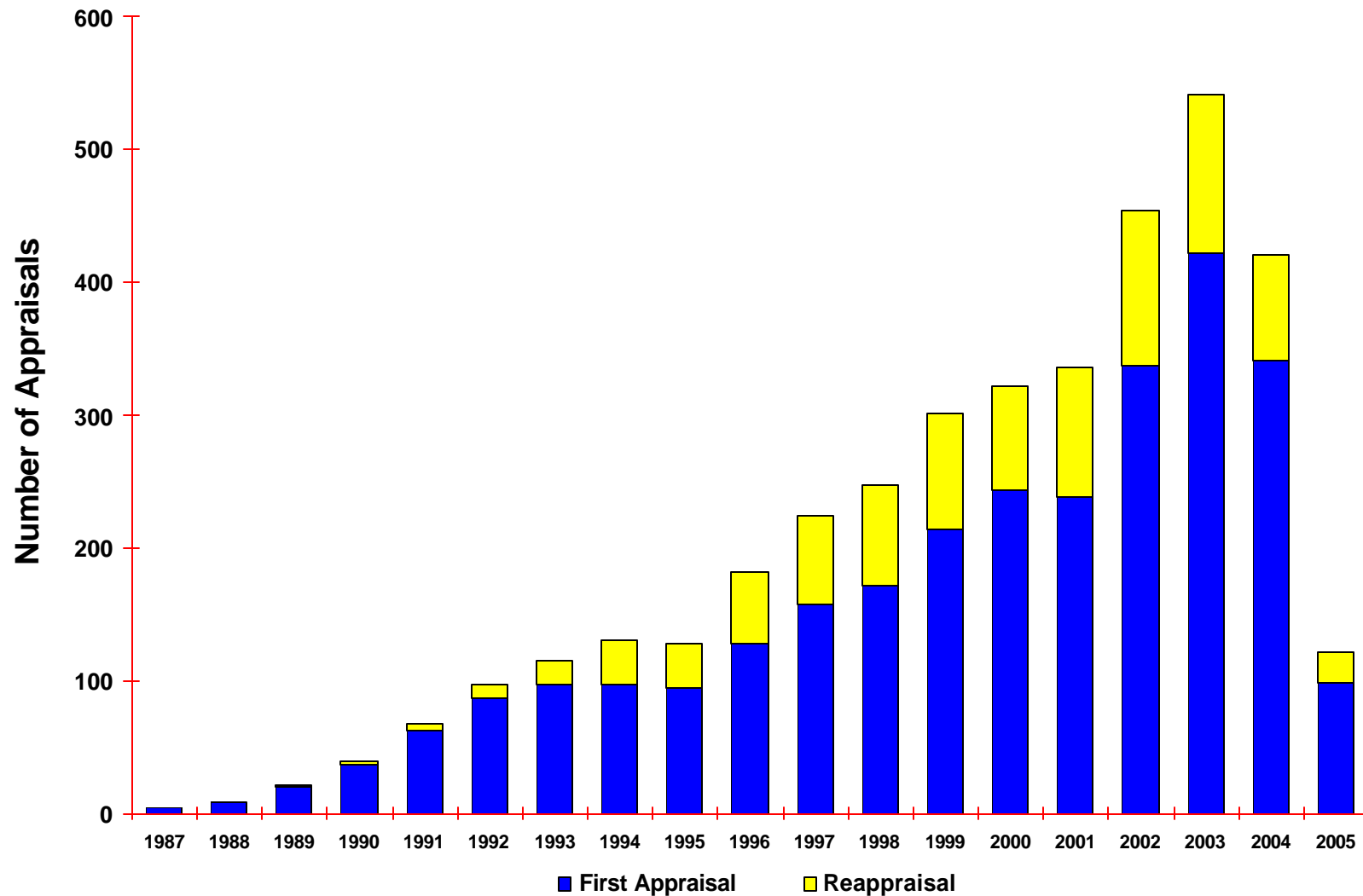
Number of Appraisals and Maturity Levels Reported to the SEI by Country

Country	Number of Appraisals	Maturity Level 1 Reported	Maturity Level 2 Reported	Maturity Level 3 Reported	Maturity Level 4 Reported	Maturity Level 5 Reported	Country	Number of Appraisals	Maturity Level 1 Reported	Maturity Level 2 Reported	Maturity Level 3 Reported	Maturity Level 4 Reported	Maturity Level 5 Reported
Argentina	10 or fewer						Mauritius	10 or fewer					
Australia	36	Yes	Yes	Yes	No	Yes	Mexico	30	Yes	Yes	Yes	Yes	Yes
Austria	10 or fewer						Morocco	10 or fewer					
Barbados	10 or fewer						Netherlands	25	Yes	Yes	Yes	No	Yes
Belgium	14	Yes	Yes	Yes	No	No	New Zealand	10 or fewer					
Brazil	29	Yes	Yes	Yes	Yes	Yes	Norway	10 or fewer					
Canada	81	Yes	Yes	Yes	Yes	Yes	Pakistan	10 or fewer					
Chile	20	Yes	Yes	Yes	No	Yes	Peru	10 or fewer					
China	284	Yes	Yes	Yes	Yes	Yes	Philippines	12	No	Yes	Yes	No	Yes
Colombia	10 or fewer						Poland	10 or fewer					
Costa Rica	10 or fewer						Portugal	10 or fewer					
Cyprus	10 or fewer						Puerto Rico	10 or fewer					
Czech Republic	10 or fewer						Russia	10 or fewer					
Denmark	10 or fewer						Saudi Arabia	10 or fewer					
Egypt	10 or fewer						Singapore	23	Yes	Yes	Yes	No	Yes
Finland	10 or fewer						South Africa	10 or fewer					
France	146	Yes	Yes	Yes	Yes	Yes	Spain	26	No	Yes	Yes	No	Yes
Germany	70	Yes	Yes	Yes	No	No	Sri Lanka	10 or fewer					
Greece	10 or fewer						Sweden	10 or fewer					
Hong Kong	10						Switzerland	10 or fewer					
Hungary	10 or fewer						Taiwan	10 or fewer					
India	399	Yes	Yes	Yes	Yes	Yes	Thailand	17	Yes	Yes	Yes	No	No
Indonesia	10 or fewer						Turkey	10 or fewer					
Ireland	11	Yes	Yes	Yes	No	No	Ukraine	10 or fewer					
Israel	31	Yes	Yes	Yes	No	No	United Arab Emirates	10 or fewer					
Italy	36	Yes	Yes	Yes	No	Yes	United Kingdom	140	Yes	Yes	Yes	No	No
Japan	161	Yes	Yes	Yes	Yes	Yes	United States	1982	Yes	Yes	Yes	Yes	Yes
Korea, Republic of	77	Yes	Yes	Yes	Yes	Yes	Uruguay	10 or fewer					
Latvia	10 or fewer						Venezuela	10 or fewer					
Lithuania	10 or fewer						Vietnam	10 or fewer					
Malaysia	10 or fewer												

The organization maturity profile, page 6, can be created for certain countries using the Interactive Maturity Profile available in the Software Engineering Information Repository Web site. Please visit: <http://seir.sei.cmu.edu>. If you are not already a member of the SEIR web site, please register to join. Registration and use of the site are free.



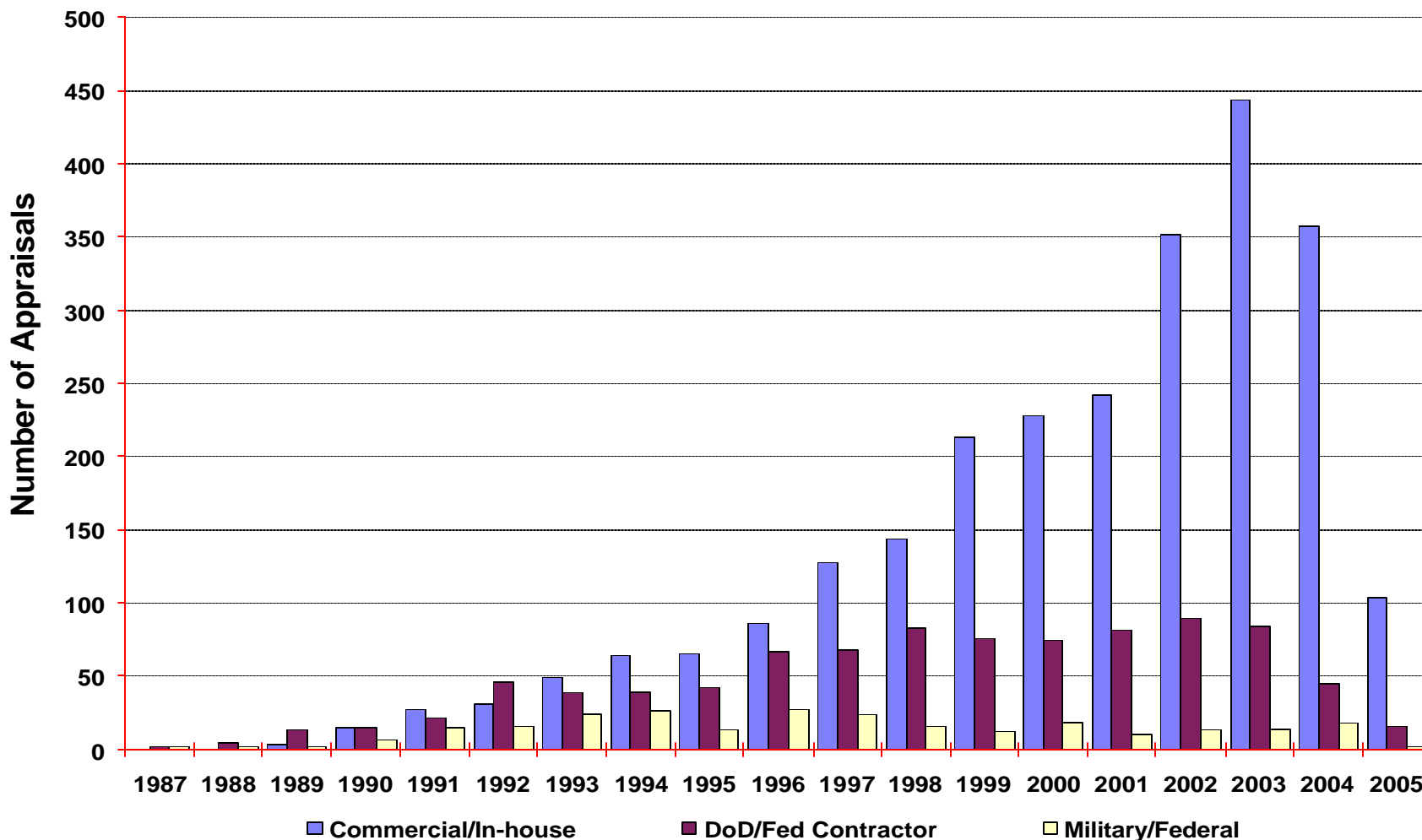
Number of SW-CMM Appraisals Reported to the SEI by Year



Based on **3,728** appraisals conducted through **June 2005** and reported to the SEI by **July 2005**



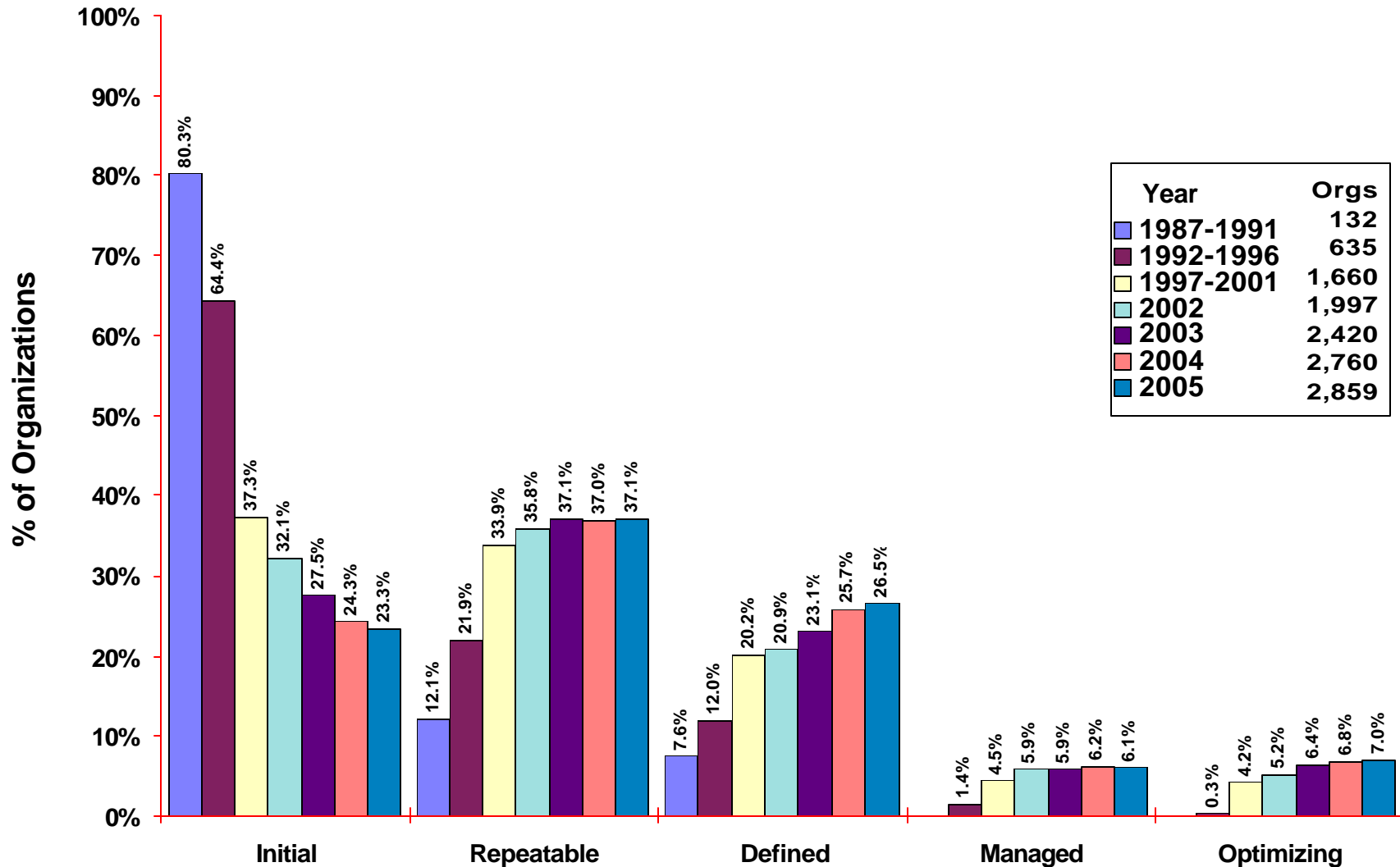
Number of SW-CMM Appraisals Reported to the SEI by Organization Categories and Year



Based on 3,726 appraisals reporting organization categories



Trends in the Community Maturity Profile



Based on a cumulative view of the most recent appraisals of organizations up through the year indicated. This accounts for the difference from the figures on page 5.



Section 3: Organizational Trends

Appraisals conducted through June 2005 and reported to the SEI by July 2005

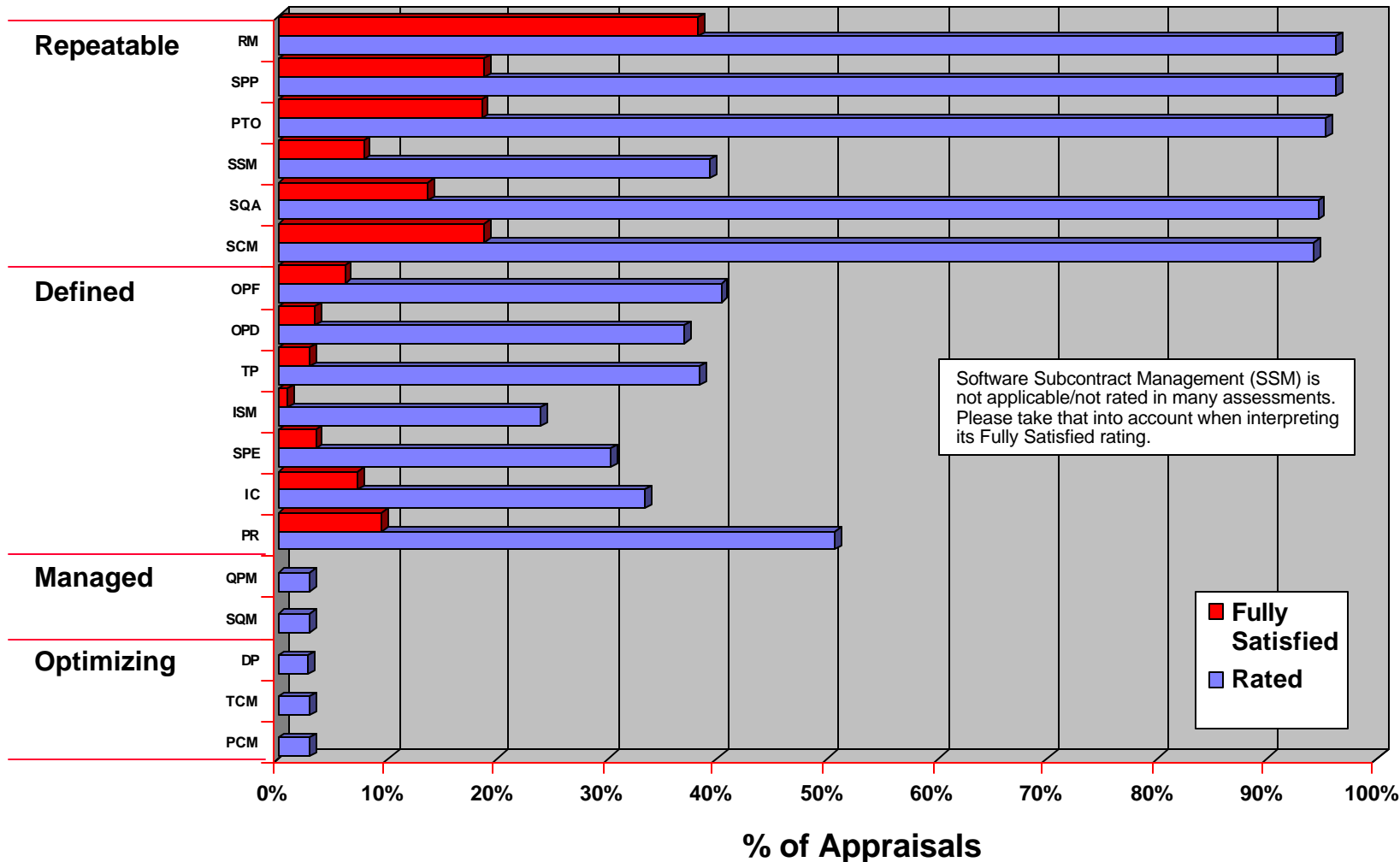
- **1,895 Key Process Area (KPA) profiles**
 - satisfaction of KPAs by maturity level for organizations appraised at levels 1 and 2
- **685 reappraised organizations**
 - accounting for 1,564 appraisals
 - although some organizations conducted multiple reappraisals, only the first and latest appraisals were used in creating the charts on pages 23 & 24

Please refer to: Terms Used in this Report on page 29



Key Process Area Profiles - 1

Organizations Appraised at Level 1

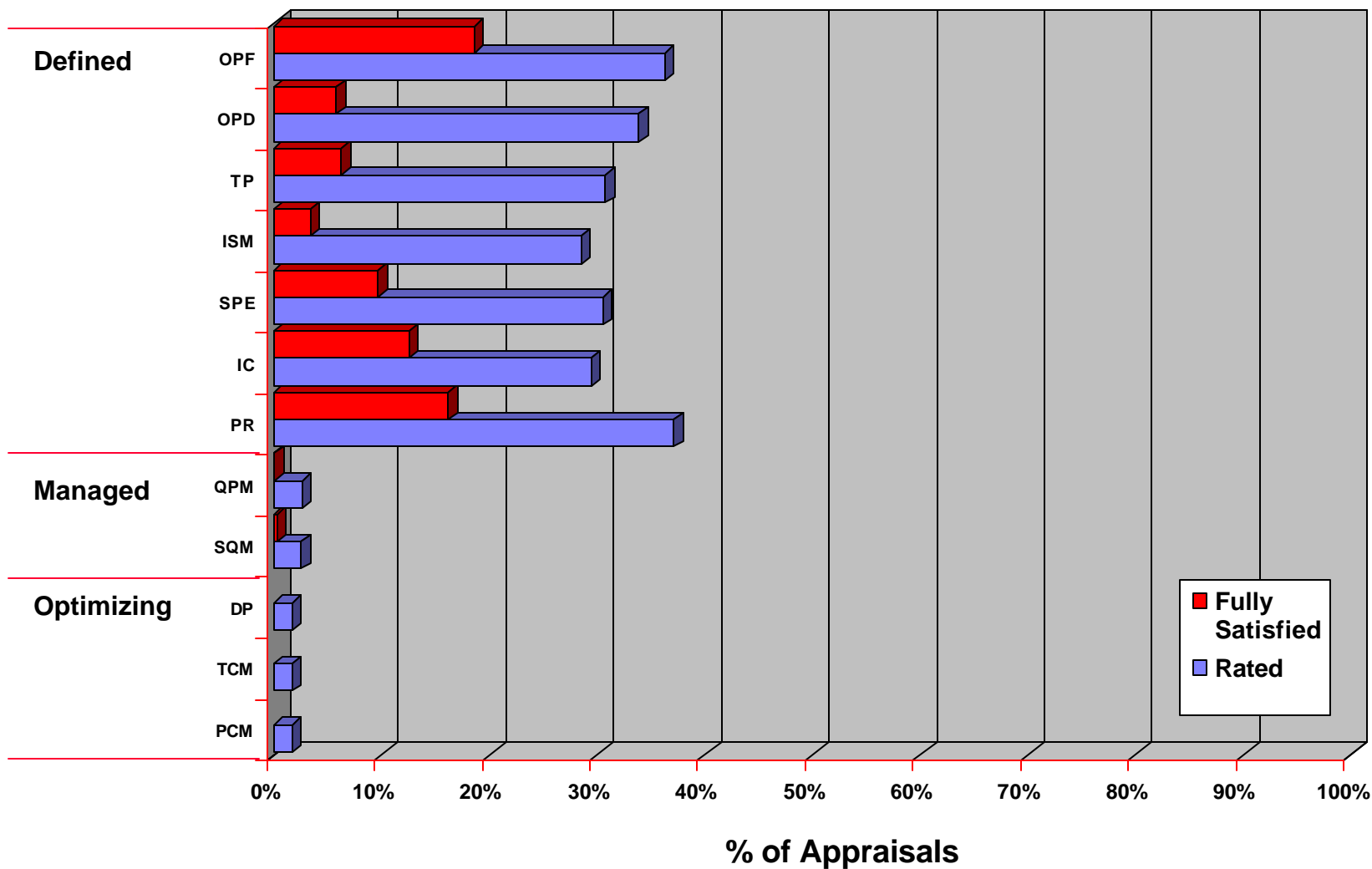


Based on 578 CBA IPI and SCAMPI with SW-CMM appraisals reporting a maturity level rating



Key Process Area Profiles - 2

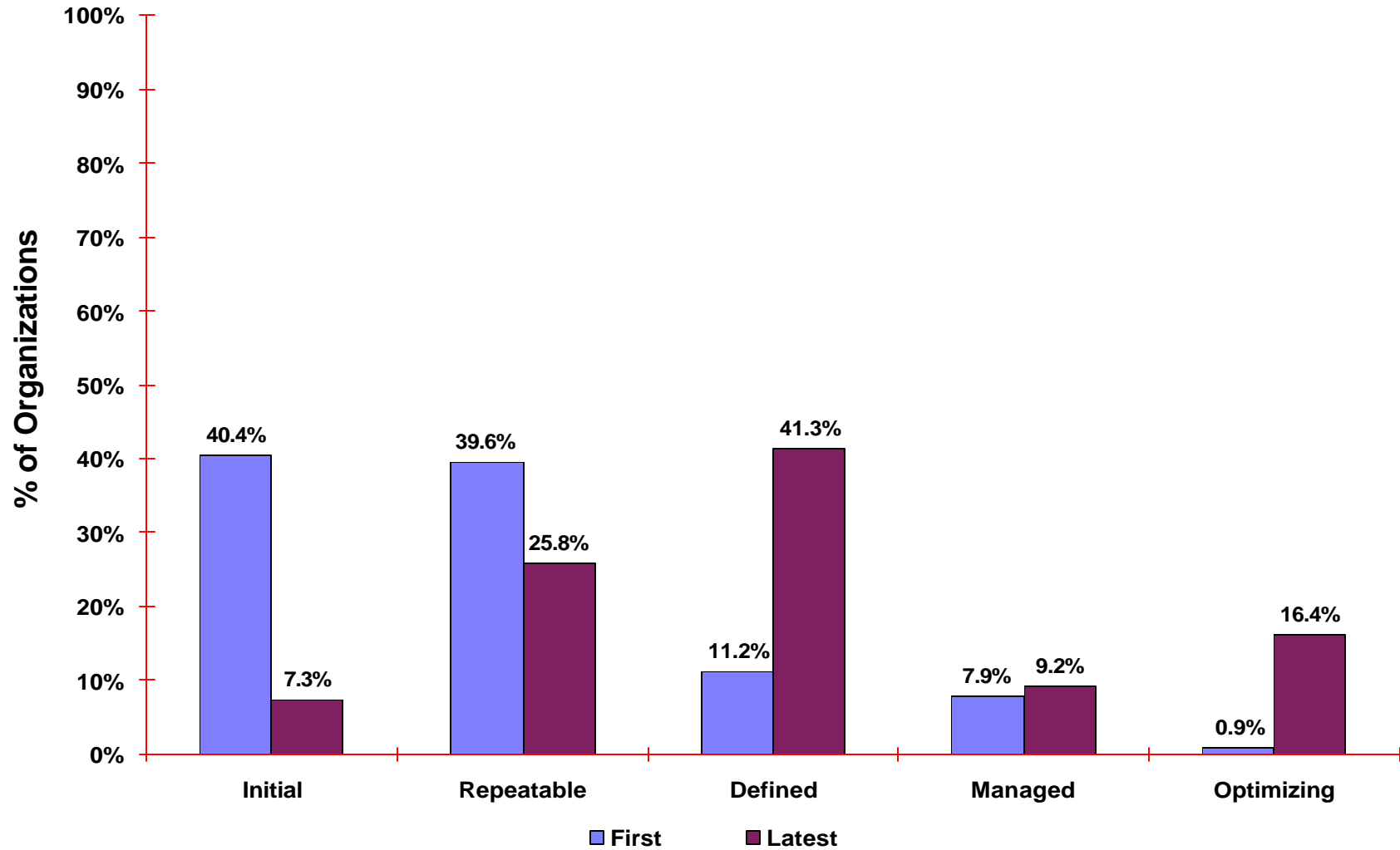
Organizations Appraised at Level 2



Based on 1317 CBA IPI and SCAMPI With SW-CMM appraisals reporting a maturity level rating



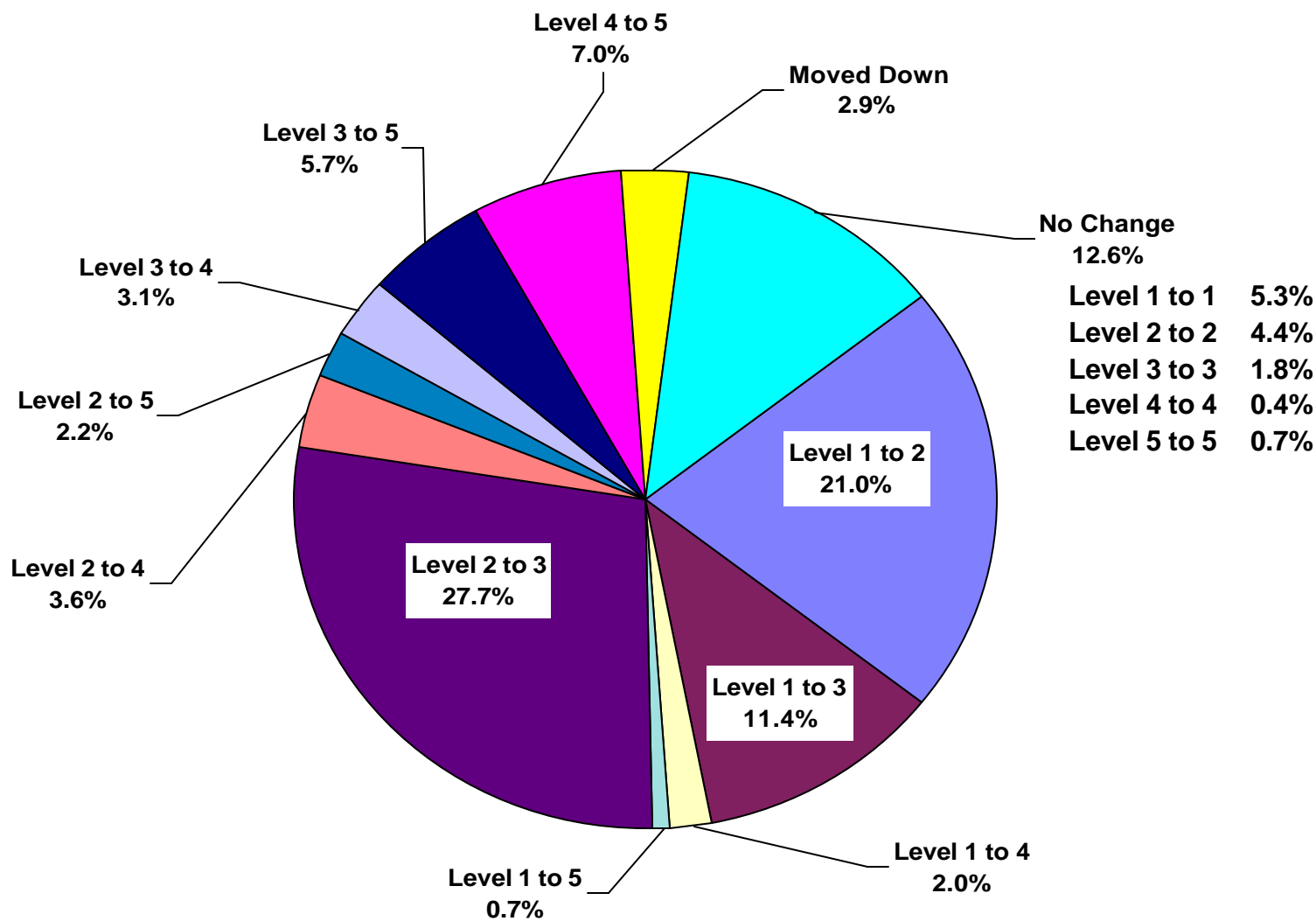
Maturity Level of First and Latest Appraisal



Based on 685 reappraised organizations using their first and latest appraisal



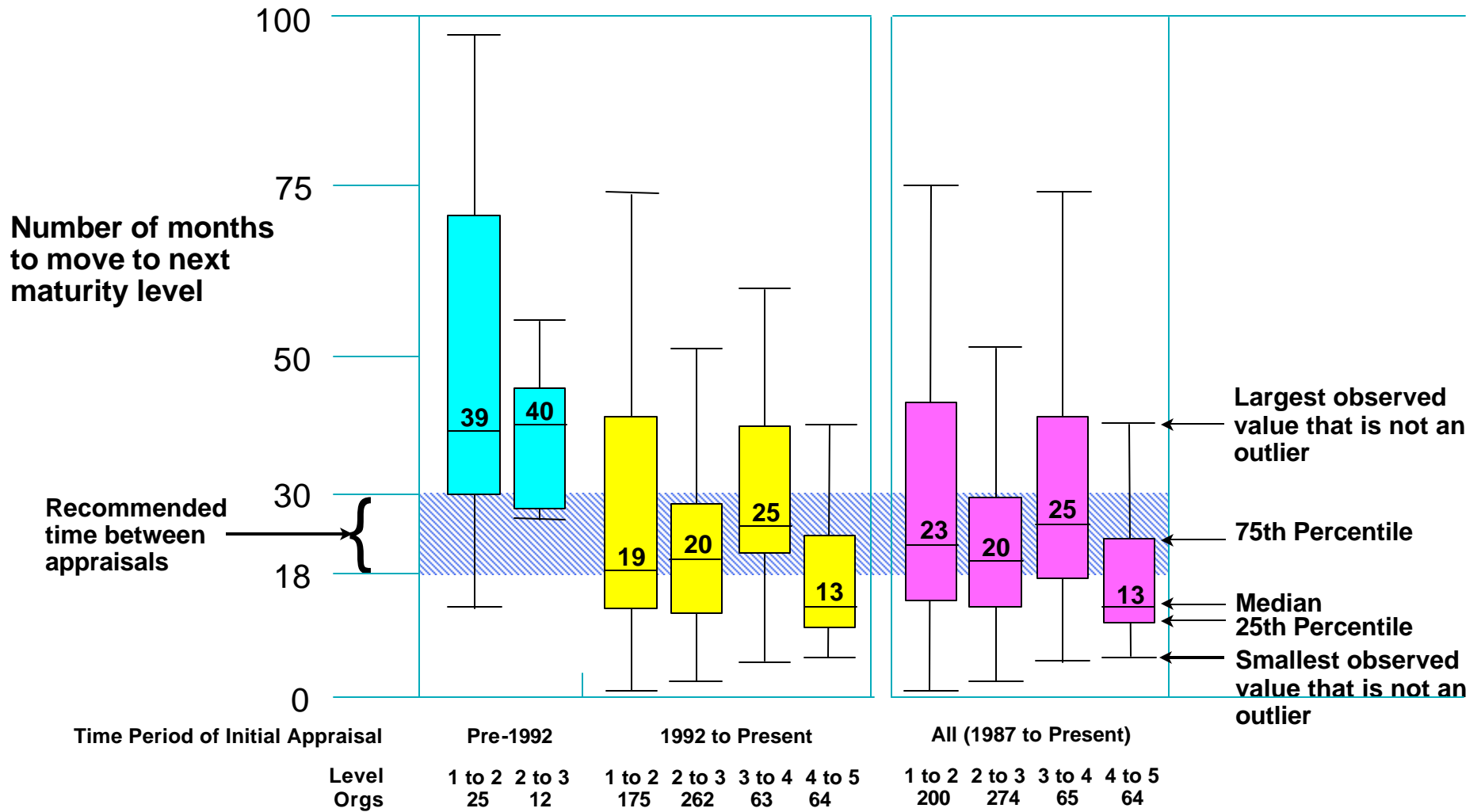
Reappraisals Change in Maturity Level



Based on 685 reappraised organizations using their first and latest appraisal



Time to Move Up





Summary of Current Status

Commercial and in-house organizations reporting most appraisals

Of U.S. organizations, the services and manufacturing industries reported most appraisals

Half of the organizations reporting size have 100 or fewer software personnel

More Non-USA appraisals reported than U.S. in this 5 year snapshot



Summary of Organizational Trends - 1

The total number appraisals for 2004 is less than 2003. It is the first time decrease since 1996

Software Subcontract Management is the least frequently satisfied level 2 KPA among organizations* appraised at level 1

Integrated Software Management is the least frequently satisfied level 3 KPA among organizations* appraised at level 2

Higher maturity has been reached among those organizations reporting reappraisals



Summary of Organizational Trends (continued) - 2

For organizations that began their CMM-based SPI effort in 1992 or later, the median time to move from:

- **maturity level 1 to 2 is 19 months**
- **maturity level 2 to 3 is 20 months**
- **maturity level 3 to 4 is 25 months**
- **maturity level 4 to 5 is 13 months**

Note: The median time to move from maturity level 1 to 2 dropped from 20 month to 19 month



Terms Used in this Report

- Appraisal** - The appraisal methods used in this report are the Software Process Assessment (SPA), CMM-Based Appraisal for both Internal Process Improvement (CBA IPI) and Standard CMMI® Appraisal Method for Process Improvement (SCAMPI). We do request and receive other Software CMM-based appraisals such as Software Capability Evaluations (SCE) and Interim Profiles. As our sampling size of these other methods increase, they will be reported here.
- Company** - Parent of the appraised entity
A company can be a commercial or non-commercial firm, for-profit or not for-profit business, a research and development unit, a higher education unit, a government agency, or branch of service, etc.
- Organization** - a.k.a. Appraised entity
The organization unit to which the appraisal results apply. An appraised entity can be the entire company, a selected business unit, units supporting a particular product line or service, etc.
- Non-USA** - Appraised entity whose geographic location is not within the United States. The parent of the appraised entity may or may not be based within the United States.



Report your Appraisal Results to the SEI

The briefing is only possible due to the cooperation of organizations and individuals sending in their appraisal results to the SEI

In order to provide this information and service in the future, it will depend on this continued cooperation

Please visit:

<http://www.sei.cmu.edu/appraisal-program/profile/about.html>

for forms, information, and instructions on how to report appraisals to the SEI



Contact Information

Please visit:

<http://www.sei.cmu.edu/appraisal-program/profile/about.html>

and review the information provided before contacting:

SEI Customer Relations (412) 268-5800
SEI FAX number (412) 268-5758

Internet Address

customer-relations@sei.cmu.edu

Mailing Address

Customer Relations
Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213-3890