

September 4, 2002

Analysis of Project Management Survey Data

This preliminary analysis was performed by Glenn Black, Associate with Process Quality Associates Inc. based upon data supplied by Mr. Xxxxxx, Project Manager, Xxxx Xxxxxxxx, Cape Town, South Africa on Sept. 3rd, 2002.

1. Executive Overview

- a. If these survey results are typical for all project management areas within Xxxx Xxxxxxxx, then Xxxx Xxxxxxxx's system is **Fair** (overall score of 69%) in project management excellence.
- b. While 1980's were about Quality, the 1990's were about mergers, acquisitions, and globalization.
- c. **PQA** predicts the 2000 decade will probably be defined by *velocity*. While most organizations are operating at a JIT Velocity Factor of between 30 to 60, the world-class organizations have achieved a level of 2 to 3.
- d. Project Management (PM), engineering, and order entry/production scheduling systems can have a significant effect on these JIT Velocity Factors. Some organizations have been successful in improving PM velocity by 10% to as high as 50%.
- e. To further improve the current project management system, it is recommended that the following six areas be the focus for further development and improvement:
 - i. Lack of measurement systems and tracking can allow a project to wander at great cost. (Question # 5, 9, 31).
 - ii. Launching of projects, understanding the stakeholders and all their needs, and the stated/implied constraints needs better control (Question # 13, 21, 30, 54, 59, 68)
 - iii. People see the current system as too much of the wrong bureaucracy (too

much in some areas, too little in others, people interact in a “free spirit” and a somewhat un-coordinated way) (Question # 51, 75, 76, 96).

- iv. Calculate your JIT Velocity Factor for the overall organization, and the impact of PM on that Factor. Take appropriate actions to improve.
- v. Investigate **CCPM** when Sr. Management and the project team members are both ready to get serious about projects. Currently, there is inadequate motivation to achieve optimum project results (based on these survey results).
- vi. Awareness training on **CCPM** may help Xxxx Xxxxxxxx achieve the necessary “critical mass” necessary to launch a **CCPM** implementation.

2. Analysis

- a. **Figure 1** shows the frequency distribution for the frequency of occurrence of the various Project Management Undesireable Effects (PMUE’s). The mode (most frequently occurring score) is a score of “3” which is *Significant negative effects* when compared to most organizations.
- b. **Figure 2** shows the frequency distribution for the severity scores of the various Project Management Undesireable Effects (PMUE’s). This defines how badly that PMUE disturbs the normal PM system, the deliverables, and the expectations of the various stakeholders (ie. customers, employees, suppliers, etc.) The mode (most frequently occurring score) is a score of “3” which is *Significant negative effects*.
- c. **Figure 3** shows the overall satisfaction raw scores for the various PMUE’s. As can be seen, the maximum score observed was 12 (out of a maximum possible of 25), the minimum is 4 (the absolute minimum possible is 1.0), the mode is 9, and the average is 8.36.

There is significant variability in the individual scores (ie. Coefficient of Variation is 27.5%, suggesting that there are a number of clear focal points for improvement).

This distribution would generally be considered stunted (ie. Abnormally narrow), which would be expected if these were averaged scores, or people were somewhat ambivalent, jaded, or no longer care (ie. Everything trends to “average”). This bears further investigation.

The overall satisfaction score is 69.3% which is **Fair**.

- d. **Figure 4** shows the Box & Whisker plots for the Occurrence scores in the 7 sub-families involved in Project Management. Note that while all families have the same mean scores, while Output and Environment have the least variability, The Family “Inputs” has the greatest variability.
- e. **Figure 5** shows the distribution of Severity scores for the 7 Project Management families. Again, the “Inputs” family has significant variation, while all the other factors have minimal distributions, but do have outliers. Since there are no “5” scores (ie. Stunted distribution), the “4” scores should be investigated as significant risks in the PM system.
- f. **Figure 6** shows the distribution of the overall satisfaction scores for the 7 different Families that make up Project Management. Note again, that all factors have the same median value of 9. Again, this is an abnormal, stunted distribution and symmetry. It appears it may be “group think” or politically incorrect to answer anything but median answers.
- g. **Figure 7** shows the family of distributions for the various frequency of occurrence scores. There is insufficient variability in the data (ie. Stunted distributions) to draw many conclusions. However, there is clearly a skewed distribution for the Occurrence Frequency Score of 2 (ie. The thin blue cross is the average value, the centre of the median notch in the bar shows the median value. The long tail of the distribution is at the low Severity scores end of the distribution). This tends to suggest that for Xxxx Xxxxxxxx, there are many more high severity risks than low severity risks within the PM system. This is an uncommon situation, and bears further investigation.

If this data are universally true at Xxxx Xxxxxxxx (an “abnormal” or unusual situation), this represents a quantum increase in the overall PM system risk, and should therefore be assessed for system modification possibilities, or at least be managed more closely than other organizations with the opposite skewing of distributions (the “normal”, expected situation).

3. **Opportunity for Improving**

- a. Due to the generally stunted distributions, there is some doubt on the interpretation of the data.
- b. Assuming the answers given are representative of the entire PM system, there is

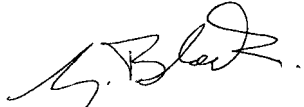
minimal driving force for change. All that can be probably accomplished is small changes and improvements on the edges of the system. Unless employees, stakeholders, and customers are currently highly motivated, and world-class orientated workers, attempts at significant change in the PM system will probably be resisted or ignored.

- c. If management is able to show stakeholders that there are significant benefits to be achieved in better PM, or that it is “politically correct” to discuss PM system problems, then there may be opportunities to improve the PM systems and the overall results currently achieved.

For further analysis, training, or implementation assistance, feel free to contact **Process Quality Associates Inc.** at +1 (519) 667-1720 (Toll Free 1-800-837-7046), or e-mail pqa@pqa.net.

Feel free to visit our Critical Chain Project Management website at <http://www.pqa.net/ccpm/W05001001.html> for more information on this powerful tool.

Yours truly,

A handwritten signature in black ink, appearing to read "G. Black".

Glenn Black B.A.Sc. P.Eng. CQE CQA
President
Process Quality Associates Inc.

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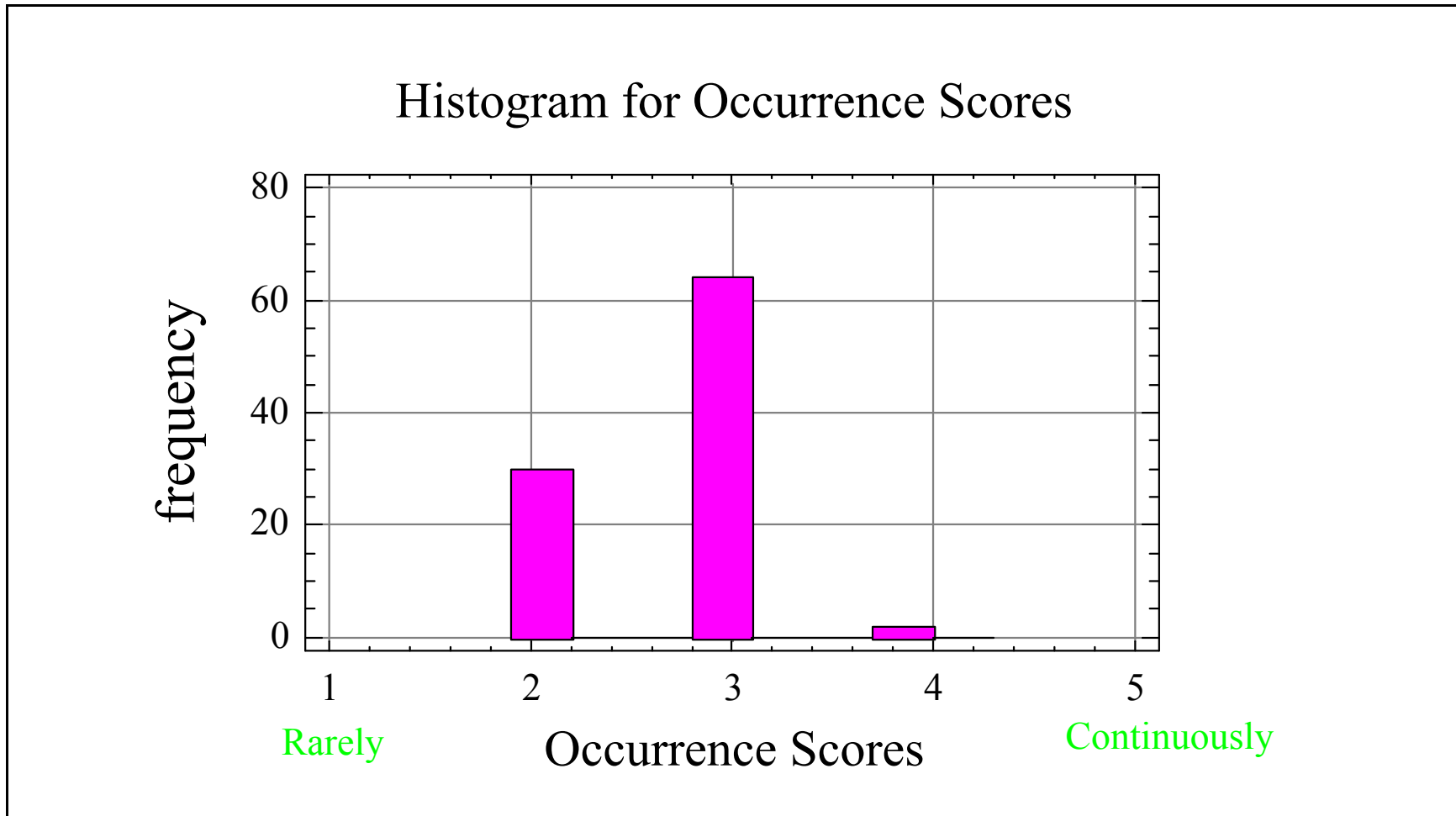


Figure 1 Histogram of Occurrence Scores

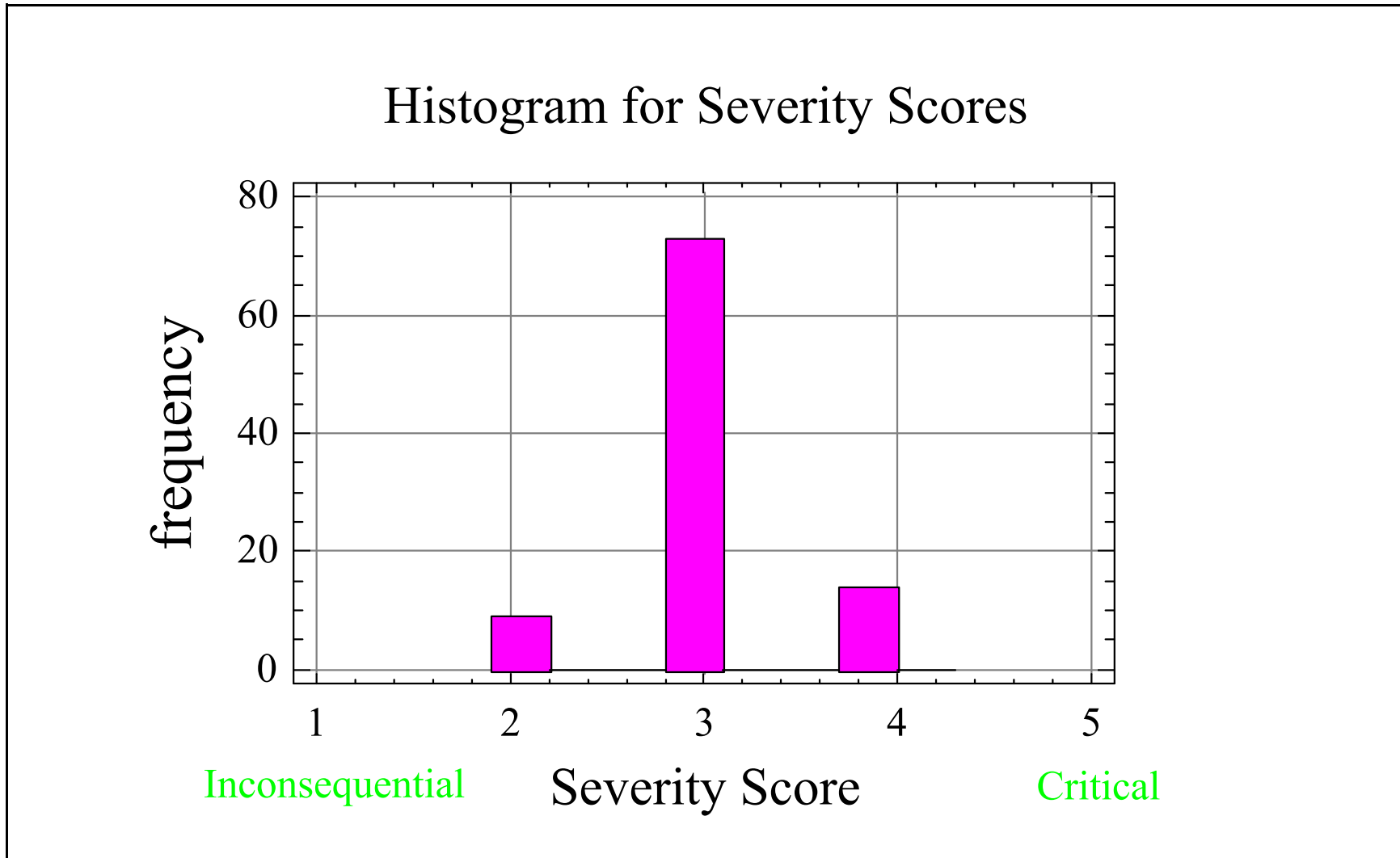


Figure 2 Histogram of Severity Scores

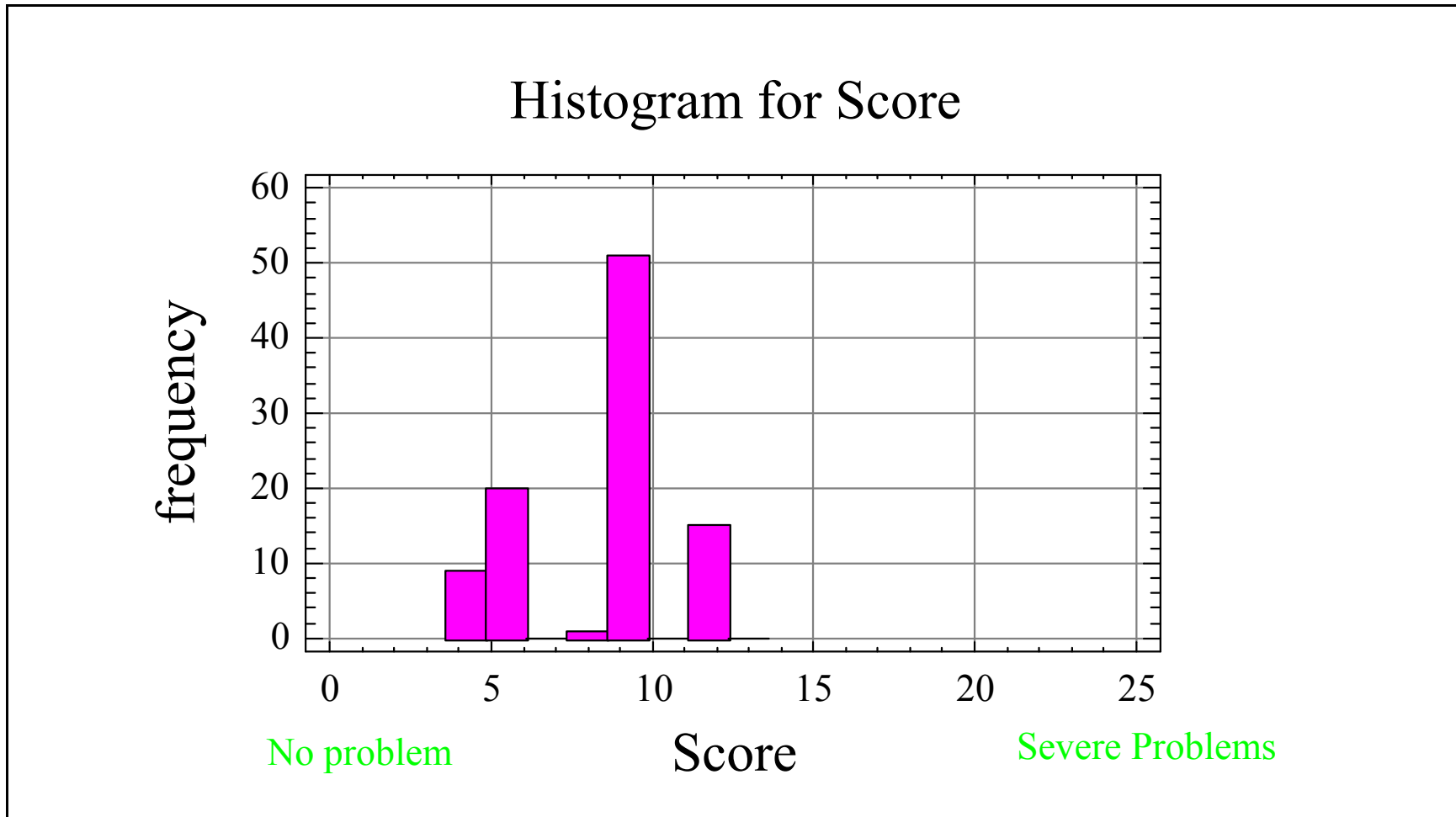


Figure 3 Frequency Histogram of Overall Priority Score

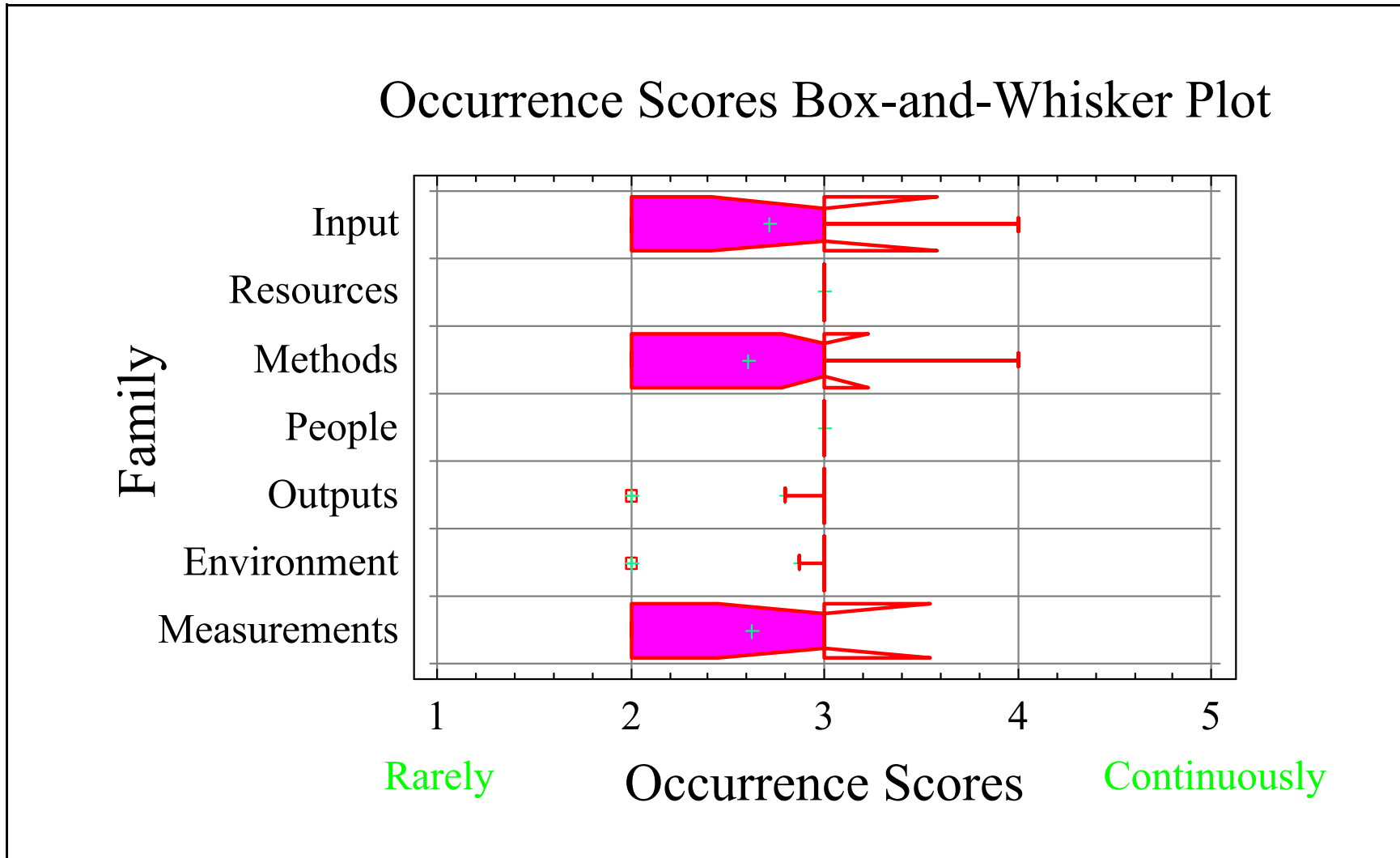


Figure 4 Box & Whisker Plot of Occurrence Scores for the 7 Project Management Families

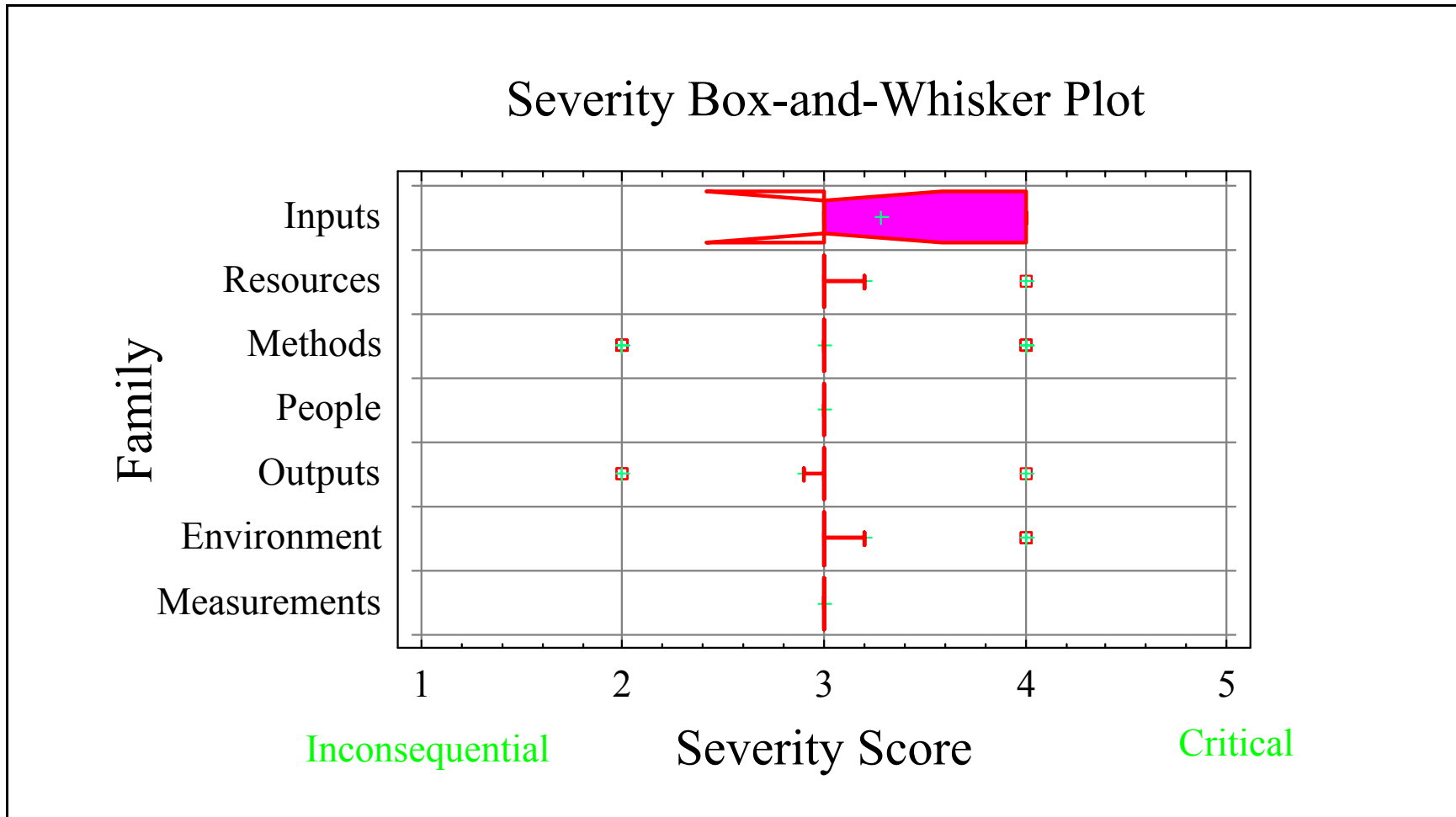


Figure 5 Box & Whisker Plot of Severity Score for the Project Management Families



Figure 6 Box & Whisker Plot of Overall Satisfaction with the 7 Families for Current Project Management System

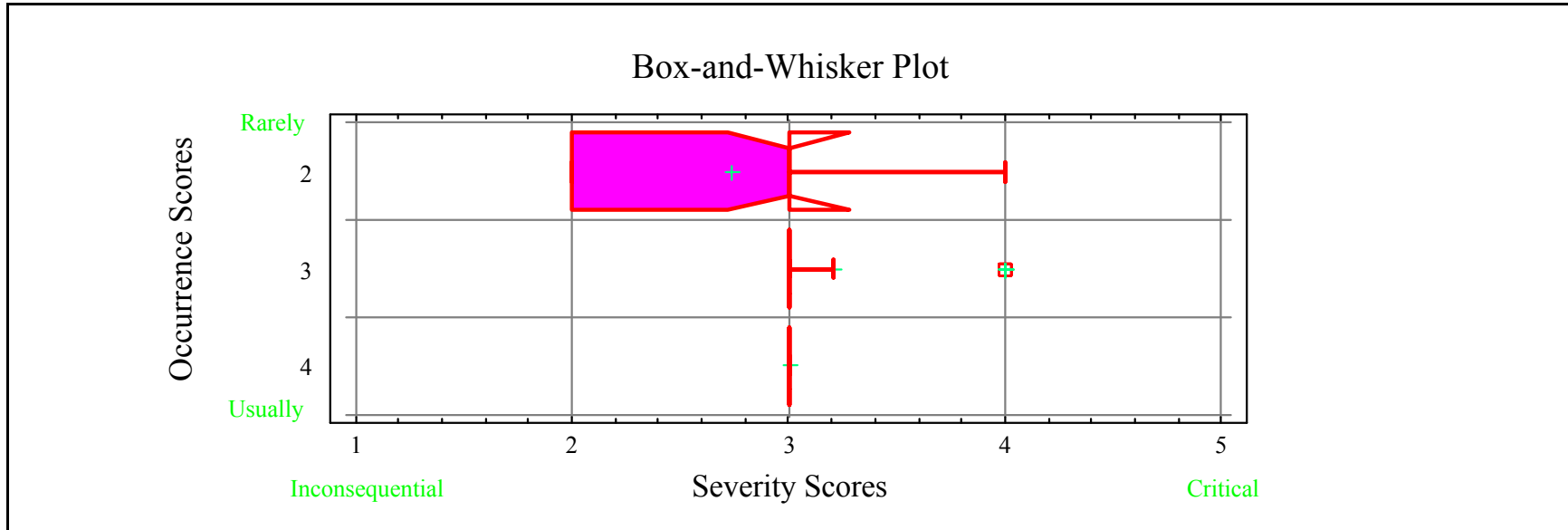


Figure 7 Box & Whisker Plot for Occurrence Frequency Scores vs. Severity Scores