SOFTWARE METRICS COMPREHENSIVE

SPRING 2012

You are a software engineering consultant. You have been retained by a social media company that helps people look for jobs (think of a company like LinkedIn or a Facebook for jobhunters). They already have a website with a few hundred features. People can post resumes, post letters of reference, post samples of their work, search for companies who have jobs open, search for information about companies, and similar tasks. The company wants to create custom versions of its software for tablets (Android, RIM, Microsoft, and Apple), so all the features have to work on all the platforms. They have to run reasonably quickly and be easy to use. You will have access to an imperfectly-written requirements document, design notes from the customer and from your company's salespeople, limited access to the customer's staff (to ask them questions), and you can look at the company's current product and competing companies' websites to see what features they make visible to the public. The company wants you to help them collect and interpret the project's metrics and help them manage the project based on these metrics.

1. What is a work breakdown structure? How could you create one for this project? What would the end result contain and how would you use it to help you estimate and manage the project?
2. In your opinion, what are the five most important measurements to take on this project?
3. For 3 of the 5 suggested measurements, answer these questions:
   a. What underlying attribute are you trying to measure?
   b. How can you measure this? (For example, what would you count, and how would you count it)?
   c. What do you expect to learn from this measurement?
   d. Why do you want to know this? How do you expect to use it?
   e. Who else (besides you) do you think will rely on this information and how do you expect them to use it? (Answer "who" in terms of roles in your company or the customer company)
   f. How good is this measurement of the attribute? Justify that answer.
4. For 2 of the measurements you discussed in Question (3), continue with answers to these questions:
   a. Can you determine the accuracy of this measurement? How? When?
   b. Can you improve the accuracy of the measurement as the project proceeds, in a timely enough manner for your improvements to be useful? How?
   c. What are the potential costs of this measurement?
   d. What are the potential risks of this measurement?
   e. How could you mitigate those risks?