



Real World Software Engineering

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Customer Requirements



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What techniques does your organization use to understand, specify, and communicate what the customer wants?

- **Understand: Customer input comes from multiple sources**
 - Customer Visits
 - Understand both functional and operational needs
 - Input from Sales Department
 - Product Owner (Agile definition) Input
 - State of the art: tech press articles, RFC's, conferences
 - Industry trends: NFV virtualization, Big Data
- **Specify & Communicate**
 - Rally User Stories

• In hockey terms: Understanding "where the puck is going" as opposed to "where the puck is now." Listening to customers can be dangerously close to the latter.

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Problem Solving



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B. What techniques do teams and individuals use to understand and solve problems? We are especially interested in techniques that go beyond algorithm development.

- Hack something in and see if it works... Best if you can get the customers to test it for you....

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Problem Solving



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B. What techniques do teams and individuals use to understand and solve problems? We are especially interested in techniques that go beyond algorithm development.

- Problem solving requires the ability to do abstraction. Taking details from the 100 foot level and elevating the discussion to the bigger picture at the 10,000 foot level. What solutions would be scalable, resilient, elegant, performant, etc.
- Then the devil is in the details...
- Requires group discussion, design reviews by peers, an "outside-in" look, and so forth
- Customer issues: Duplication of the ENTIRE customer environment as closely as possible

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Teamwork



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C. What teamwork skills do you expect? What does 'teamwork' mean in your company?

If you can't work in a team, you can't work in our company

We already have 1 Prima Donna (Dr. Gersch). We don't have room for any more!

Teamwork takes many forms:

- Pairing new engineers with experienced engineers – they each learn from the other
- peer code reviews
- design reviews
- task swarming (Agile term)
- cross department help (engineering backs up sales, sales engineers back up support, etc...)

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Processes & Tools



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D. What collaborative tools does your organization use?

- Code inspections; Source code control (e.g., github); Fault reporting, and tracking changes; Project management schedules
- **Light Agile Process**
 - Daily Standup Meeting
 - Small Vertical Slices
 - Iteration Demos to upper management
- Flexibility
- Test Coverage Analysis
- Analysis tools such as Coverity
- Source Control (SVN)
- Rally (Agile Project Management Tool)
 - Defect Tracking System
 - Iteration, Release & Requirements Management

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Communication



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E. What kind of communication skills do you expect? E.g. for written communications--short messages/documents/slides, for verbal communications--presentations, face-to-face conferences, distributed conferencing, etc.

Yes! All of the above.

Plus...

Selling skills

Selling means creating a willing buyer (you have to sell yourself, your ideas, your technology)

We do have a documentation person skilled at translating from "engineer" to "customer"

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