**CHAPTER 6**

Finding the voice of the user

- Student should understand that the success in software requirements, and hence in software development, depends on getting the voice of the user close to the ear of the developer.

- Student should enhance step by step to find the voice of the user.

- Student could classify users and try to understand what type of information the users from each department might supply based on their role in the organization and their department's perspective on the projects.

- Enhance the differences in user representation on agile projects.

- User classes.

- User personas.

- Connecting with user representatives.

- The product champion.

- User representation on agile projects.

Finding the voice of the user

- Success in SW requirements, and hence in SW development, depends on getting the voice of users close to the ear of the developers.
- To find the voice of users, take the following steps:
  - Identify the different classes of users for your product.
  - Select and work with individuals who represent each user class and other stakeholder groups.
  - Agree on who the requirements decision makers are for your project.
- Customer involvement is the best way to avoid the mismatch between the product that customers expect to receive and what developers build.
- The features that users present as their "wants" don't necessarily equate to the functionality they need to perform their tasks with the new product. To gain a more accurate view of user needs, the BA must collect a wide range of user input, analyze and clarify it, and specify just what needs to be built to let users do their jobs.

FIGURE 6-1 A hierarchy of stakeholders, customers, users, and user classes.
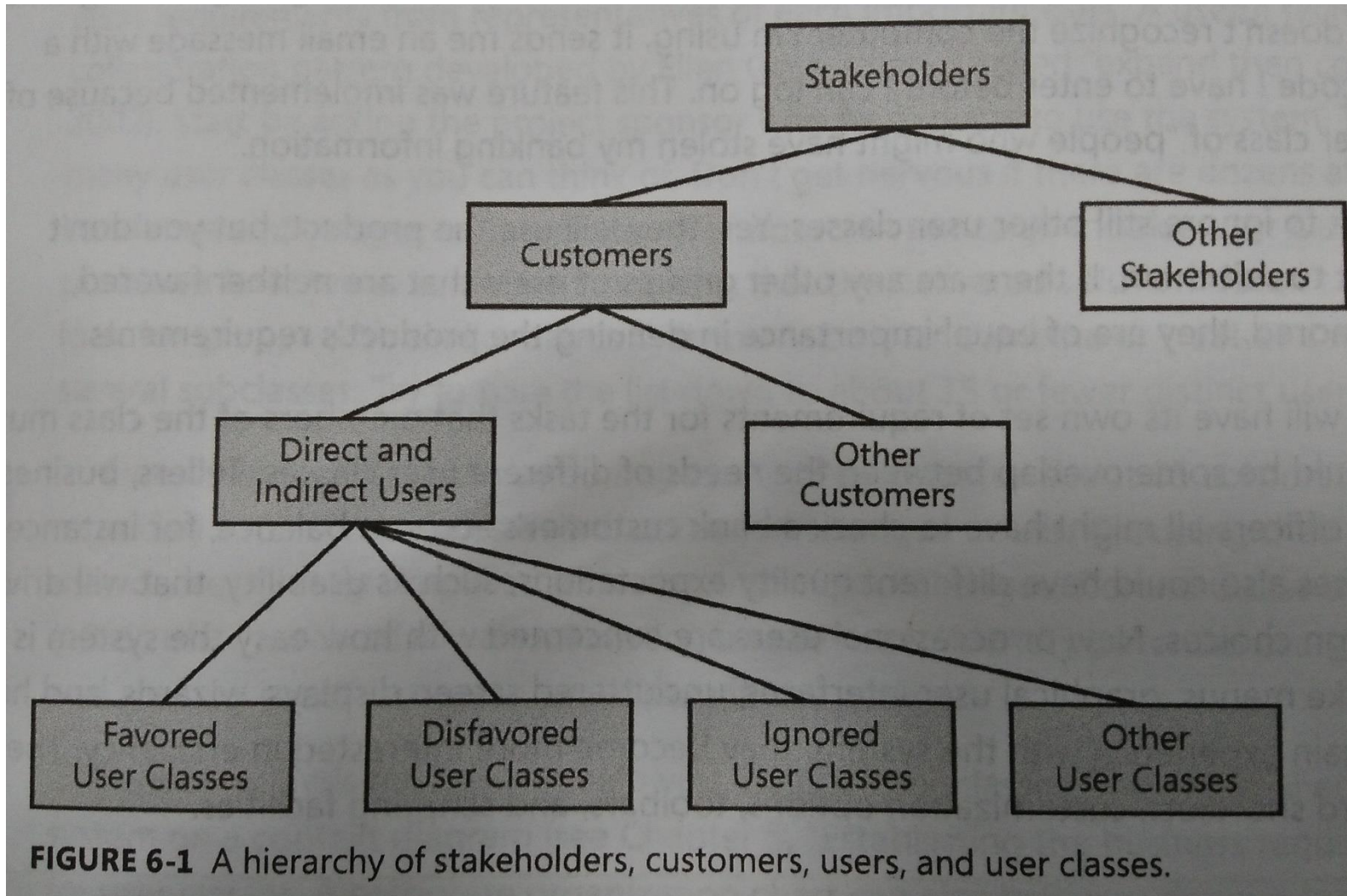
There are many types of stakeholders, you can group users into a number of distinct *user classes* based on these sorts of differences:

- Their access privilege or security levels (such as ordinary user, guest user, administrator).
- The tasks they perform during their business operations.
- The features they use.
- The frequency with which they use the product.
- Their application domain experience and computer systems expertise.
- The platforms they will be using (desktop PCs, laptop PCs, tablets, smartphones, specialized devices).
- Their native language.
- Whether they will interact with the system directly or indirectly.

- Identify and characterize the different user classes for your product early in the project so you can elicit requirements from representatives of each important class.

- A useful technique for this is a collaboration pattern (Ellen Gottesdiener) called by *"expand then contract"*:

  - Start by asking the project sponsor who expects to use the system.

  - Then brainstorm as many user classes as you can think of. Don't be nervous if there are dozens at this stage. You'll condense (viết súc tích) and categorize them later.

  - It's important not to overlook a user class, which can lead to problems later when someone complaints that the delivered solution doesn't meet her needs.

- The external entities shown outside your system on a context diagram are candidates for user classes.

- A corporate organization chart can also help you discover potential users and other stakeholders (Beatty and Chen 2012).

- Organizational chart analysis reduces the likelihood that you will overlook an important class of users within the organization.
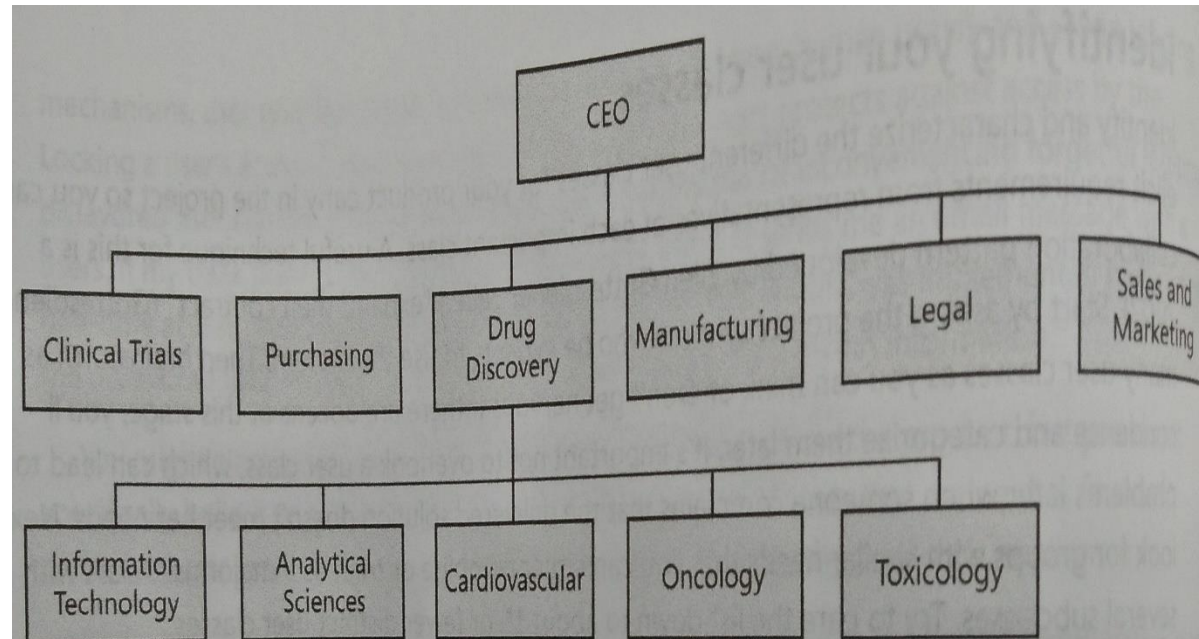

FIGURE 6-2 A portion of the organization chart for Contoso Pharmaceuticals.

TABLE 6-1 User classes for the Chemical Tracking System

Name	Number	Description
Chemists (favored)	Approximately 1,000 located in 6 buildings	Chemists will request chemicals from vendors and from the chemical stockroom. Each chemist will use the system several times per day, mainly for requesting chemicals and tracking chemical containers into and out of the laboratory. The chemists need to search vendor catalogs for specific chemical structures imported from the tools they use for drawing structures.
Buyers	5	Buyers in the purchasing department process chemical requests. They place and track orders with external vendors. They know little about chemistry and need simple query facilities to search vendor catalogs. Buyers will not use the system's container-tracking features. Each buyer will use the system an average of 25 times per day.
Chemical stockroom staff	6 technicians, 1 supervisor	The chemical stockroom staff manages an inventory of more than 500,000 chemical containers. They will supply containers from three stockrooms, request new chemicals from vendors, and track the movement of all containers into and out of the stockrooms. They are the only users of the inventory-reporting feature. Because of their high transaction volume, features that are used only by the chemical stockroom staff must be automated and efficient.
Health and Safety Department staff (favored)	1 manager	The Health and Safety Department staff will use the system only to generate predefined quarterly reports that comply with federal and state chemical usage and disposal reporting regulations. The Health and Safety Department manager will request changes in the reports periodically as government regulations change. These report changes are of the highest priority, and implementation will be time critical.

- A persona is a description of a hypothetical, generic person who serves as a stand-in for a group of users having similar characteristics and needs.

- Personas details for a commercial customer include social and demographic characteristics and behaviors, preferences, annoyances, and similar information.

- Using personas understand the requirements and to design the user experience to best meet the needs of specific user communities.

- Why do each user class needs someone to speak for requirements?
  - All projects need suitable representatives to provide the voice of the users.
  - These users should be involved throughout the development life cycle, not just in an isolated requirements phase at the beginning of the project.
- Typical communication pathways between users and developers.
  - One study indicated that using more kinds of communication links, and more direct links between developers and users led to more successful projects.
  - The most direct communication occurs when developers can talk to appropriate users themselves. This means that if there are layers between the user and the developer, it inceases the chance of miscommunication and delay transmission.
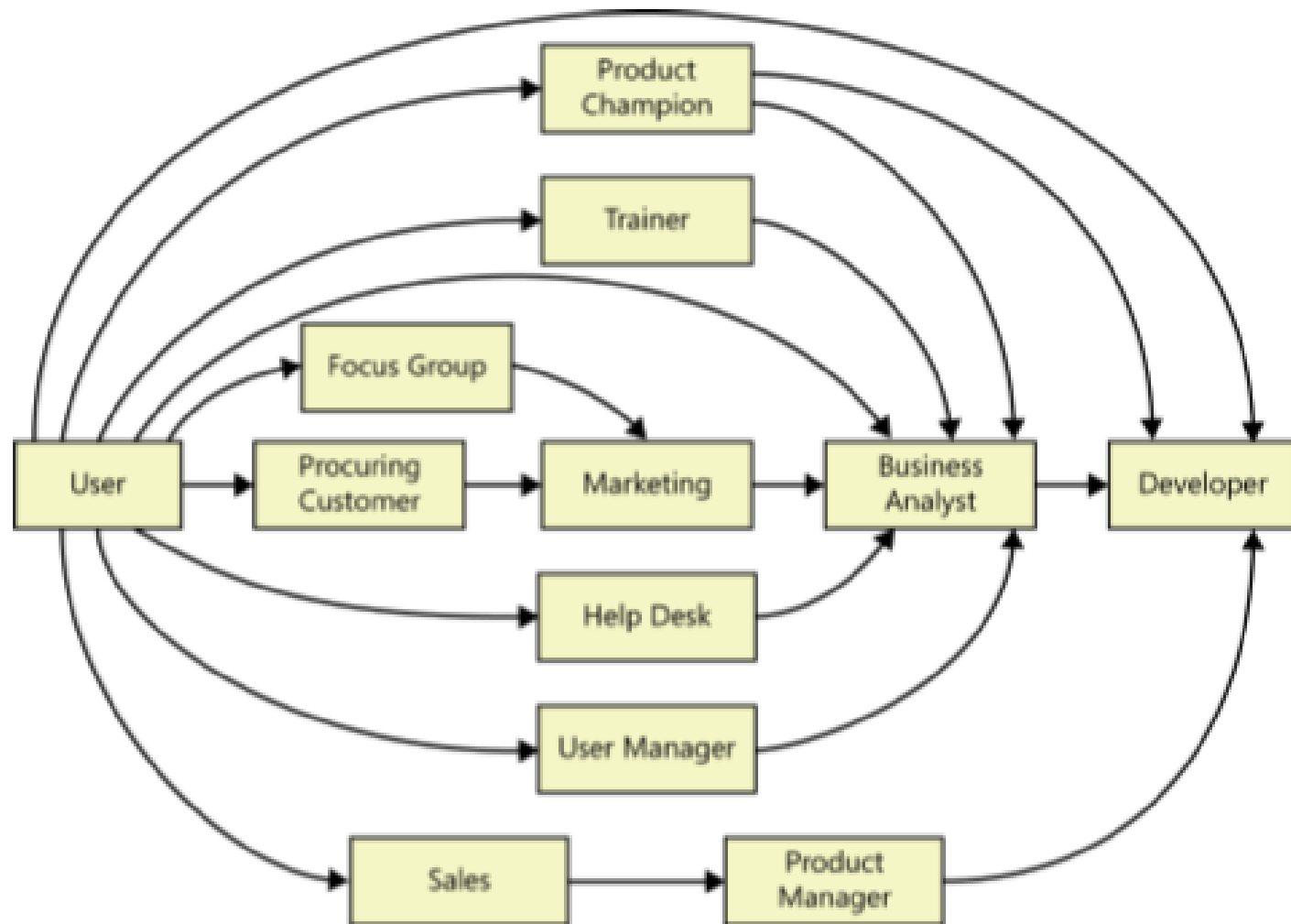
FIGURE 6-3 Some possible communication pathways between the user and the developer.

- Definition: product champions?
  - Each of our projects included a few key members of our user community to provide the requirements. We called these people *product champions*.
- What does the product champion do?
  - Each product champion serves as the primary interface between members of a user class and BA.
  - Product champions gather requirements from other members of the user class they represent and reconcile inconsistencies.
  - Best product champions have a clear vision of the system. They should be effective communicators who are respected by their colleagues.
  - They understand clearly the application domain and the solution's operating environment.
  - They work best if they are fully empowered to make binding decisions on behalf of the user class they represent.

- External product champion:
  - When developing commercial SW, it can be difficult to find product champions from outside your company. In this case, you can rely on internal subject matter experts or outside consultants to serve as surrogates for actual users.
  - Another alternative is to hire a suitable product champion who has the right background.
- Product champion expectations:
  - To help the product champions succeed, document what you expect your champions to do. These written expectations can help you build a case for specific individuals to fill this critical role.
 - See more detail in next slide.

TABLE 6-2 Possible product champion activities

Category	Activities
Planning	■ Refine the scope and limitations of the product. ■ Identify other systems with which to interact. ■ Evaluate the impact of the new system on business operations. ■ Define a transition path from current applications or manual operations. ■ Identify relevant standards and certification requirements.
Requirements	■ Collect input on requirements from other users. ■ Develop usage scenarios, use cases, and user stories. ■ Resolve conflicts between proposed requirements within the user class. ■ Define implementation priorities. ■ Provide input regarding performance and other quality requirements. ■ Evaluate prototypes. ■ Work with other decision makers to resolve conflicts among requirements from different stakeholders. ■ Provide specialized algorithms.
Validation and verification	■ Review requirements specifications. ■ Define acceptance criteria. ■ Develop user acceptance tests from usage scenarios. ■ Provide test data sets from the business. ■ Perform beta testing or user acceptance testing.
User aids	■ Write portions of user documentation and help text. ■ Contribute to training materials or tutorials. ■ Demonstrate the system to peers.
Change management	■ Evaluate and prioritize defect corrections and enhancement requests. ■ Dynamically adjust the scope of future releases or iterations. ■ Evaluate the impact of proposed changes on users and business processes. ■ Participate in making change decisions.

- Multiple product champions:
  - One person can not describe the needs for all users of an application.
  - These champions are not assigned full time, but each one spends several hours per week to work on the project.

FIGURE 6-4 Product champion model for the Chemical Tracking System.
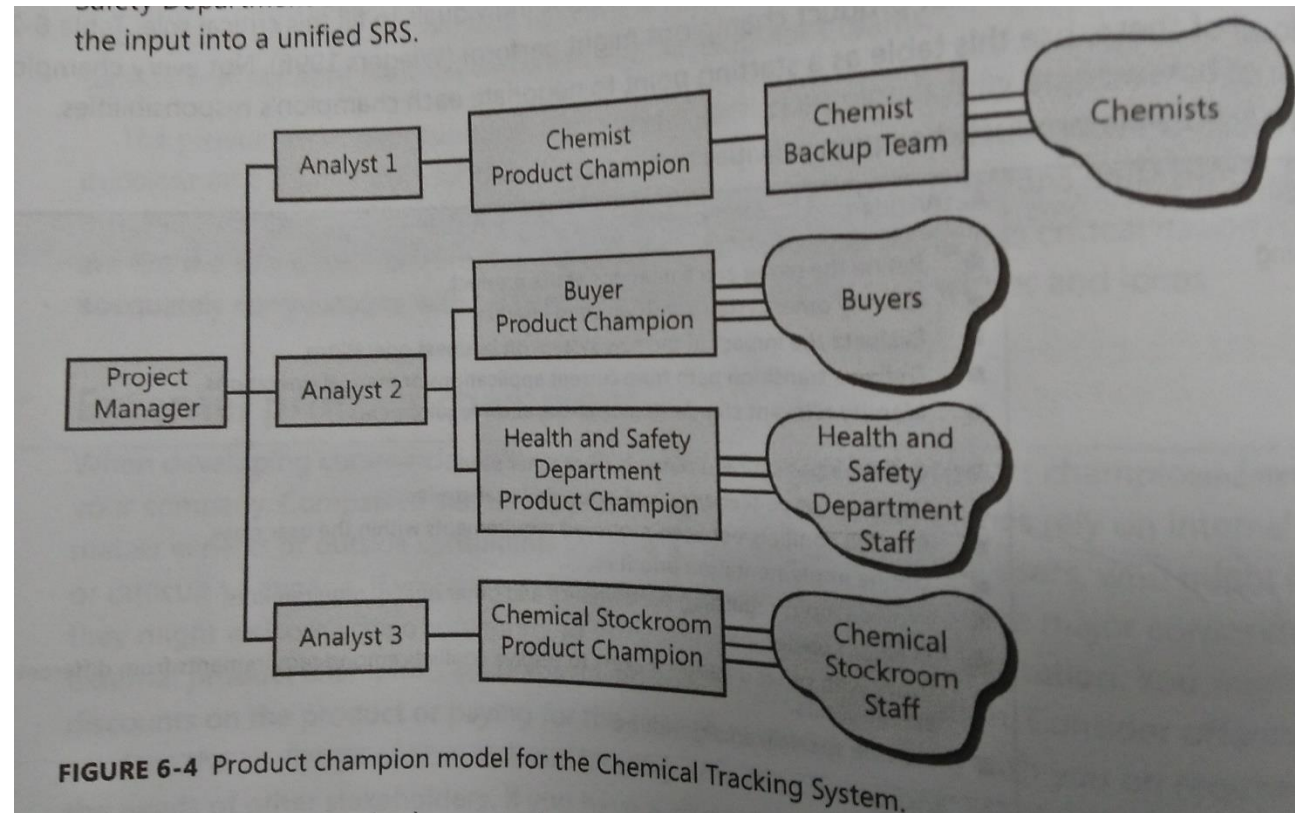
- Selling the product champion idea:
  - Sometimes, we encounter resistance from the users, such as "the users are too busy.", "Management wants to make the decision.", "They will slow us down.", "I don't know what I'm supposed to do as a product champion.",…
  - Managers are sometimes reluctant to delegate authority for requirements to ordinary users.
  - If you encounter resistance, point out that insufficient user involvement is a leading cause of SW project failure.

- Product champion traps to avoid:
    - The product champion model has succeeded in many environments. It works only when the product champions understand and sign up for their responsibilities, have the authority to make decisions at the user requirements level, and have time available to do the job.
    - Some problems:
        - Managers override the decisions of the product champions. Perhaps a manager has a wild new idea at the last minute, or thinks he knows what the users need.
        - A product champion who forgets that he is representing other customers and presents only his own requirements won't do a good job.
        - A product champion who lacks a clear vision of the new system might differ decisions to the BA.
        - A senior user might nominate a less experienced user as champion because she/he doesn't have time to do the job.

- Product owner:
  - Some agile development methods include a single representative of stakeholders called **product owner** in the team to serve as the voice of the customer.
  - Product owner defines the product's vision and is responsible for developing and prioritizing the contents of the product backlog.

- Differentiate between the product owner and product champion:
  - The product owner spans all three levels of requirements: biz, user, and functional.
  - He essentially straddles (đứng giữa) the product champion and BA functions, representing the customer, defining product features, prioritizing them,…

TABLE 6-3 Suggestions for resolving requirements disputes

Disagreement between	How to resolve
Individual users	Product champion or product owner decides
User classes	Favored user class gets preference
Market segments	Segment with greatest impact on business success gets preference
Corporate customers	Business objectives dictate direction
Users and user managers	Product owner or product champion for the user class decides
Development and customers	Customers get preference, but in alignment with business objectives
Development and marketing	Marketing gets preference

- The project's leaders need to determine who will decide what to do when such situation arise, who will make the call if agreement is not reached, and to whom significant issues must be escalated when necessary.

THE END
THANK YOU!