Specifying MobileApp Quality Characteristics that May Influence Trust

Определение качественных характеристик мобильных приложений, которые могут повлиять на доверие

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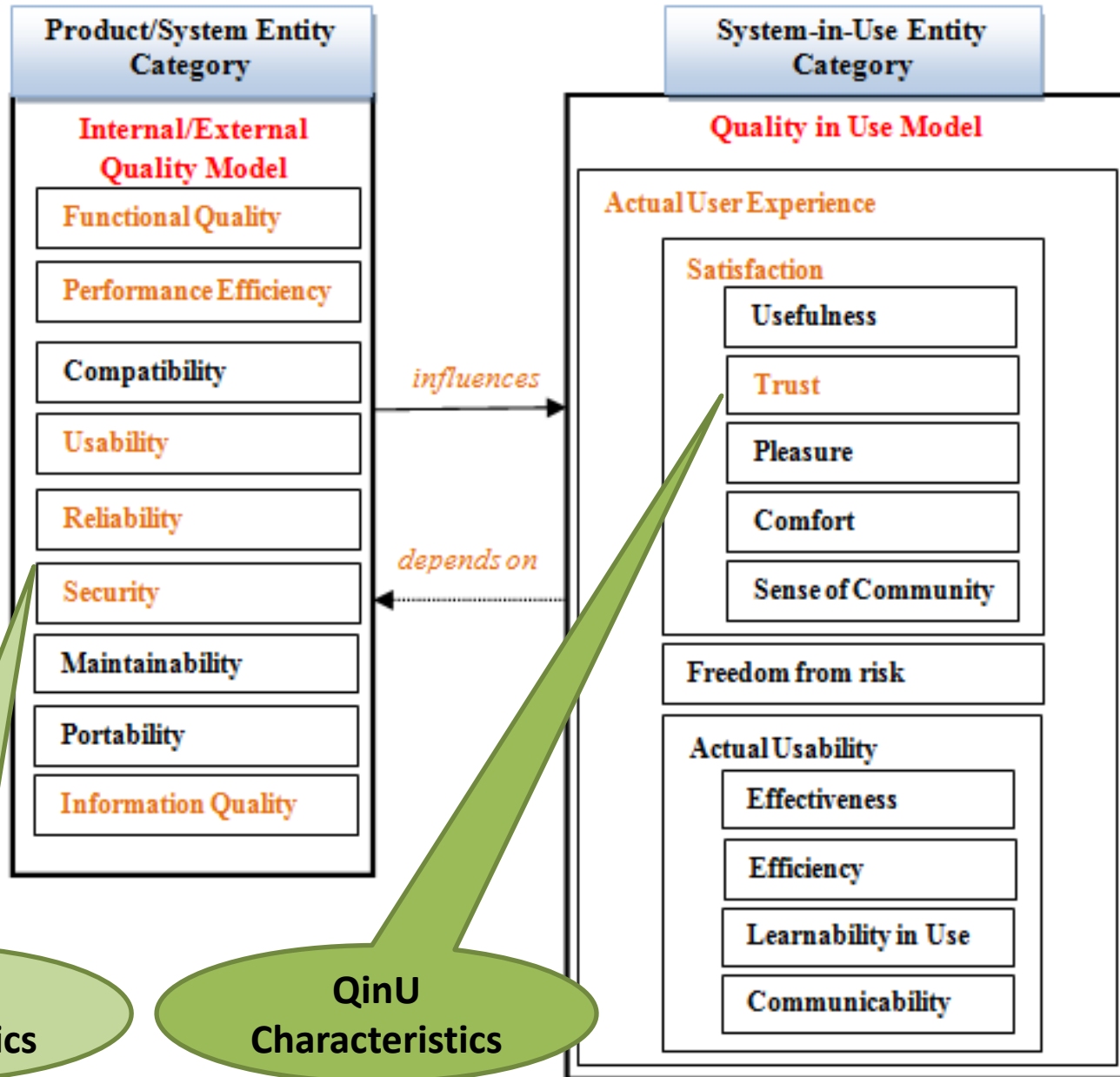# Specifying MobileApp External Quality Characteristics that May Influence MobileApp-in-use/Quality-in-use Trust
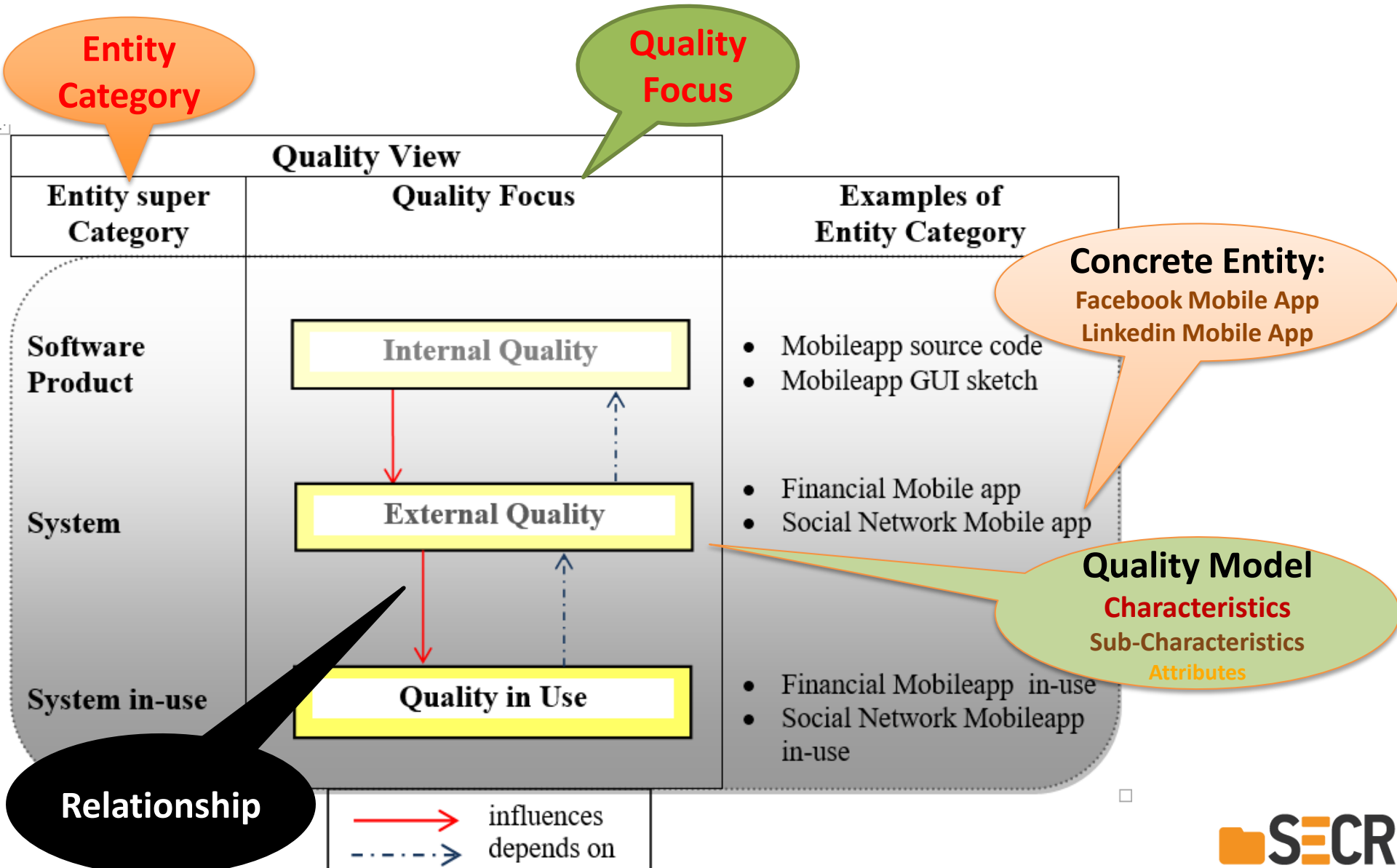
Research Question/Hypothesis

- What External Quality Characteristics for MobileApps May Influence Trust?
  - Trust a Quality-in-use sub-characteristic
  - "*Degree to which a (primary) user has confidence that a system in-use will behave as intended.*"

- Next, we show both External Quality and Quality in Use Models

Two Quality Models (in 2Q2U v.2)

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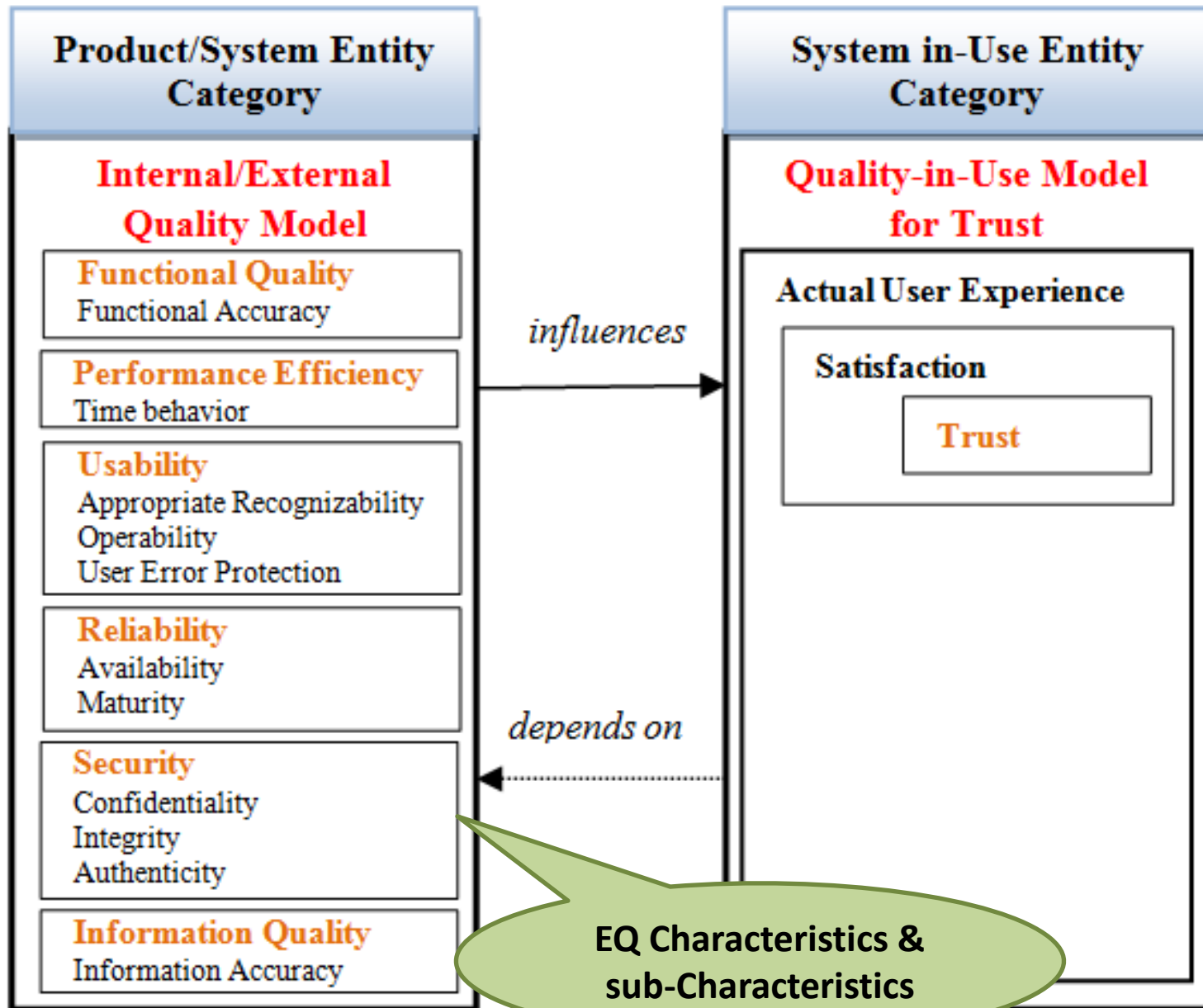
- What External Quality Characteristics for MobileApps May Influence Trust?

- We have modeled External Quality characteristics and sub-characteristics that we ascertain may influence System-in-use Trust.

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Instantiated Quality Models

To Confirm the Hypothesis

- H_0: The specified external quality characteristics and sub-characteristics are relevant for mobileapp-in-use Trust (i.e., they influence it).

- To confirm this H_0, we are designing a survey for a wider group of primary (expert) users.

- Therefore, we have built a preliminary questionnaire

The Survey Purpose

- It focuses on expert user perceptions, in order to gauge if the proposed set of external quality characteristics for mobile apps (mapped to questionnaire items) are relevant to them (by determining weights) in influencing trust in mobile apps when in-use.

- Likert 1-7 scale values can range from "Strongly Relevant" to "Strongly Irrelevant"

The Questionnaire Items/Statements

(Sub-)Characteristic name	Questionnaire Item/Statement
1. Functional Quality	
1.1 Functional Accuracy (Correctness/ Credibility)	**Q1.1.1** A component or function of a mobile app provides expected results with precision and consistency. **Q1.1.2** The source or owner of a component or function is reputable, and the company brand can be corroborated if needed.
2. Performance Efficiency	
2.1 Time Behavior	**Q2.1.1** The mobile app has the expected response times.
3. Usability	
3.1 Appropriate Recognizability (Familiarity/ Icons ease to be recognized)	**Q3.1.1** The mobile app follows a layout that you are familiar with (e.g., main menu bar at the botton). **Q3.1.2** The mobile app provides representations of control icons which are ease to be recognized (e.g., the hamburger icon).
3.2 Operability (Data Entry Ease/ Visibility/ Consistency)	**Q3.2.1** The mobile app provides ways for entering data in an easy and accurate way (e.g., defaults, mandatory entry). **Q3.2.2** GUI objects (e.g., text, buttons, icons) in the mobileapp screens have appropiate visibility (e.g., brightness, color contrast, appropiate size). **Q3.2.3** You can operate the controls (e.g., buttons, menu items, etc.) in a consistent way even in different screens.
3.3 User Error Protection	**Q3.3.1** The mobile app protects and prevents you from making errors. **Q3.3.2** The mobile app tolerates errors and enables you to recover from errors.
4. Reliability	
4.1 Availability	**Q4.1.1** The mobile app is working and accessible when you need it. <u>Note:</u> availability is a guarantee of reliable access to the content and functions by users.
4.2 Maturity	**Q4.2.1** The mobile app is free of incidents and errors when running.
5. Security	
5.1 Confidentiality (Protectability/ Privacy)	**Q5.1.1** The mobile app ensures the confidentiality of information and data by providing appropiate access permission options. **Q5.1.2** The mobile app is able to set levels of data/information privacy to be shared only with those that are authorized. **Q5.1.3** The mobile app provides the option to preserve your anonymity.
5.2 Integrity	**Q5.2.1** The mobile app prevents unauthorized access and therefore modifications of functions or data.
5.3 Authenticity	**Q5.3.1** The mobile app ensures secure access based on user credentials that verify your identity (e.g., password, biometric authentication).
6. Information Quality	
6.1 Information Accuracy (Correctness/ Credibility)	**Q6.1.1** Mobileapp's content provides information which is correct (e.g., free of typos) in a given language. **Q6.1.2** Mobileapp's content provides information which is reputable and verifiable.

Illustrating Two Questionnaire Items

- **Q3.3.2** The mobile app tolerates errors and enables you to recover from errors

- **Q5.3.1** The mobile app ensures secure access based on user credentials that verify your identity
  - E.g., string password, biometric authentication
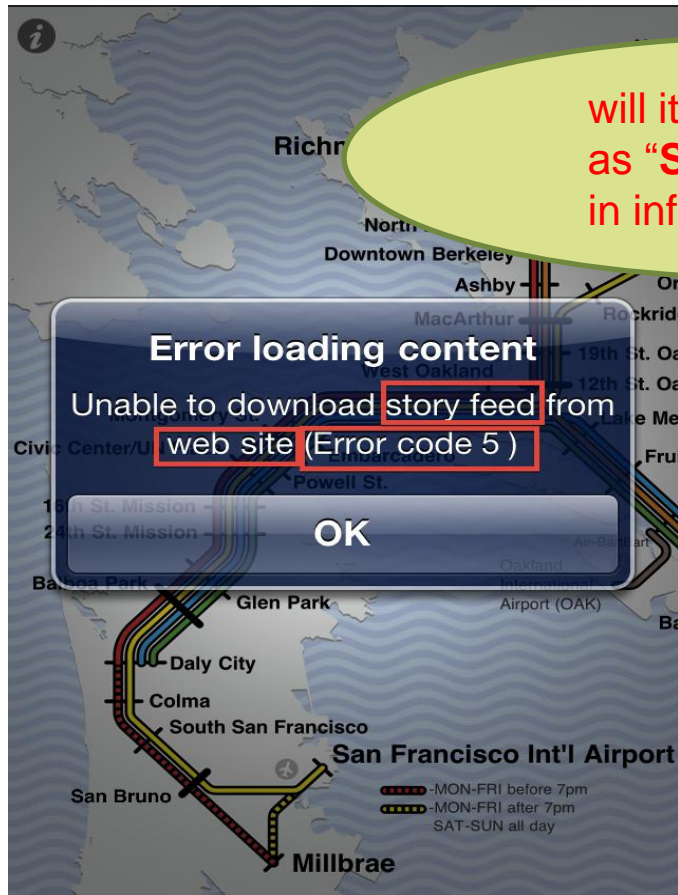
will it be ranked by users as "**Strongly Relevant**" in influencing Trust ?
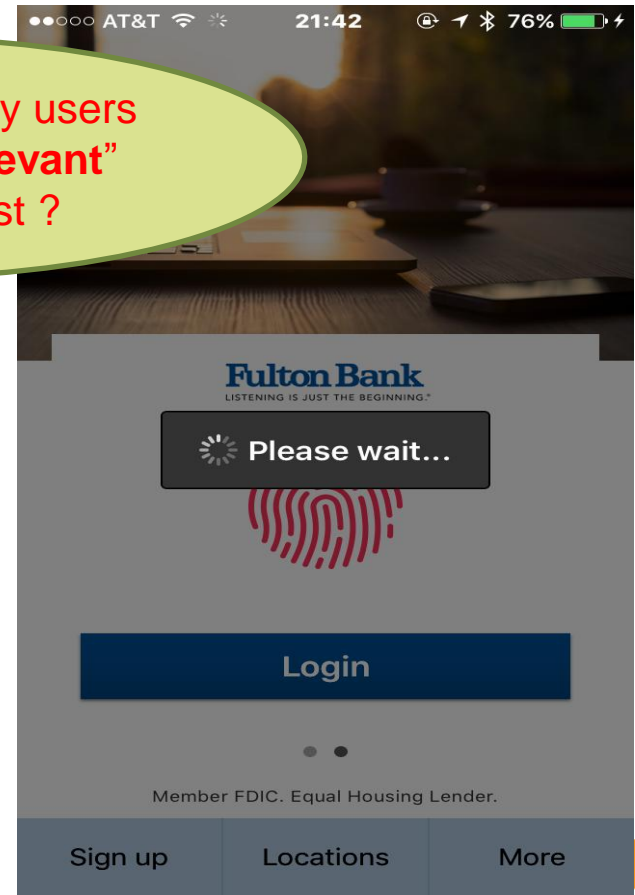
Conclusions

- MobileApps are here to stay as the world goes mobile.
- Therefore, **understanding** and **improving** systematically MobileApp **quality** has also gained prominence.

- If beforehand, we know which External Quality characteristics and attributes are relevant for user Trust and Satisfaction, then we can perform higher quality designs, and support better change actions for UX improvement.
- To this end, we have developed different **strategies** which allow systematic evaluations and improvements.

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Ongoing Work

- To pretest the questionnaire in a pilot study;

- to revise the questionnaire items based on the pilot study results; and,

- to develop procedures for administering the questionnaire and collecting results.

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