

VoiceXML

Creating apps

- **Identify application**
- **Specify the application**
- **Choose the technology**
- **Develop the business model**
- **Develop the application**
- **Test the application**
- **Deploy and monitor**



Identify Application

- **Conduct ethnography studies**
- **Identify candidate applications**
- **Conduct focus groups**
- **Select the application**



Specify Application

- **Construct conceptual model**
- **Construct scenarios**
- **Specify performance & preference requirements**



-
- **Evaluate the initial dialog design**
 - **Menu organization matches the caller's perspective**
 - **Short prompts**
 - **Tapered prompts:**
 - **Level1: short prompt + asking callers to respond**
 - **Level2: short description of what the caller should say**
 - **Level3: present an example**
 - **Level4: present a short tutorial**
 - **Wizard of Oz tests**



VoiceXML Design Stage

Choose technology

- **Test components**
- **Integrate components**



Develop Business Model

- Quantify expenses
- Quantify income
- Develop business



Develop Application

- **Specify the persona**
- **Specify the structure**
- **Specify dialog script**
- **Refine speech application**
- **Enable quantity output to user**
- **Evaluate applications functions and content**



- **Compress and minimize multilevel menus**
- **Avoid similar sounding options (“back up”, “hang up”)**
- **General format for a prompting menu**
- **Avoid hyperarticulation**
- **Guide the callers**
- **Align prompts and grammars**



- **Landmarks**
- **Field sequence**
- **Simple fields**
- **Simple and closed questions**
- **Confirmation**
- **Single utterance for multiple fields (expert)**



VoiceXML

Testing Stage

Test Application

- **Quantify test**
- **Stress test**
- **Field test**



- **Use Log File !**
- **Improve dynamic grammars on log report results**
- **Improve design on log report results**
- **Make a survey**



Deploy Application

- **Prepare users**
- **Deploy application**
- **Monitor application**

Improve Application

- **Refine grammars**
- **N-Best list**

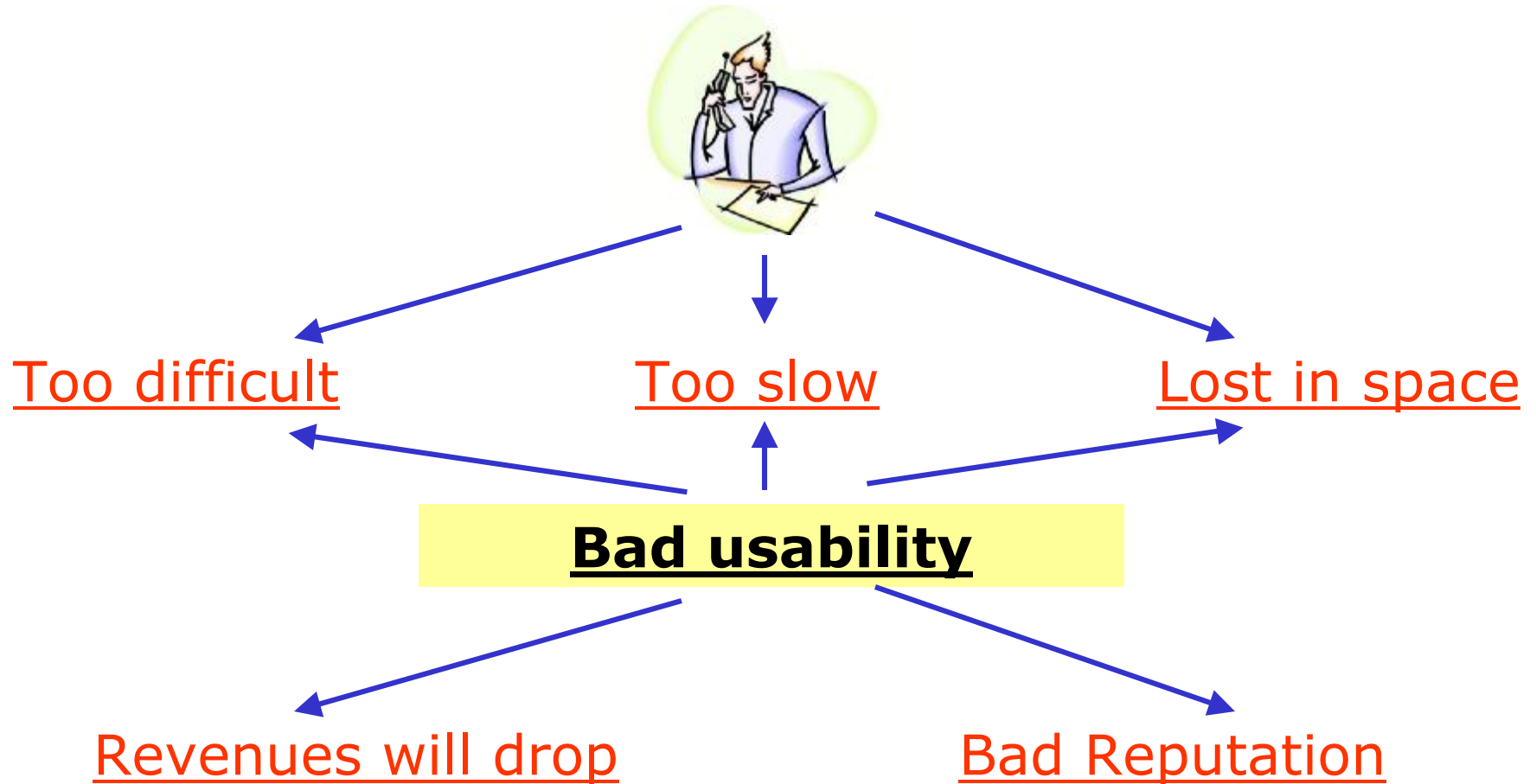


- **Usability:**

- **Developers are too focused on the system**
- **Developers are not typical users**
- **Managers often think it is just “common sense”**
- **Never take for granted**



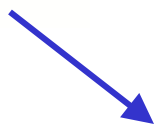
VoiceXML Usability



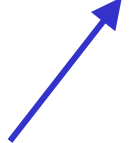
VoiceXML

Types of users

Beginner



Tutorial



Expert

DTMF

User-Directed Style

**Dictation / Query /
Command and Control**

Barge-In

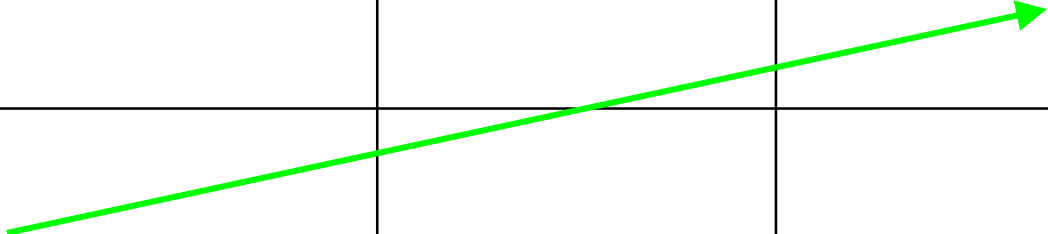
Mixed Initiative Dialogs

Forms / ASR

VoiceXML

Types of users

Expert			
Novice			
	Orientation	Exploration	Manipulation



- **Performance metrics**
- **Preference metrics**

VoiceXML

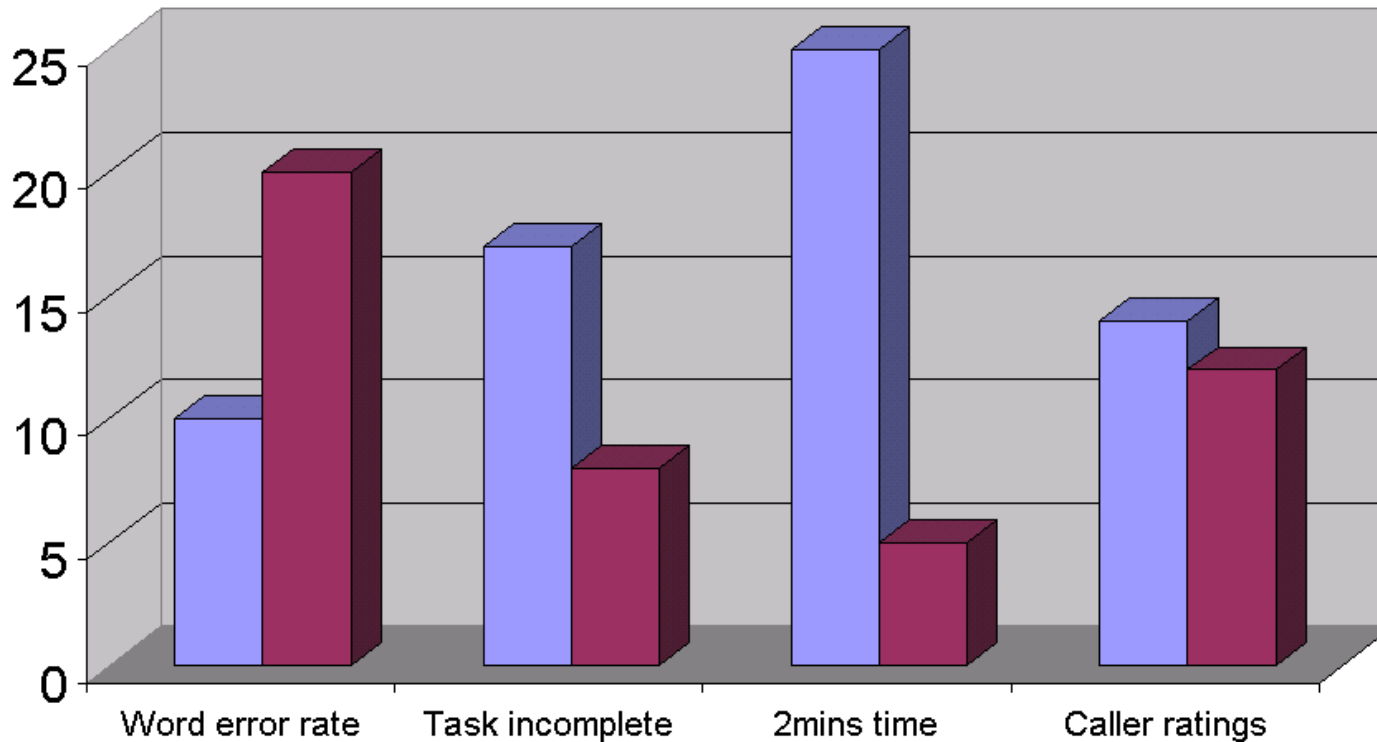
Quality indicators

- **Word Error rate**
- **Percentage of tasks completed**
- **Average time for task completion**
- **Caller ratings**



VoiceXML

Types of users



Beginners

Expert



Thank you!!

Fabrizio Gramuglio
www.vxmlitalia.com
gramuglio@dotvocal.com

