Jose Quesada

CONVERSATIONAL INTERACTION FOR BUSINESS

Brussels, 21-22 November, 2016

LT-ACCELERATE

LEKTA

ΙΣΚΑ

2016

The year

of everything

conversational

THE TECHNOLOGICAL ECOSYSTEM

Advances in language and cognitive technologies

- Speech Recognition
- Natural Language Understanding
- Machine Learning
- Smart Devices and the Internet of Things
- Cloud Computing
- Data Science and Big Data

THE TECHNOLOGICAL ECOSYSTEM

Advances in language and cognitive technologies

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APP FATIGUE

CONVERSATIONAL INTERACTIVE SYSTEMS

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IN CAR APPLICATIONS

PERSONAL ASSISTANT

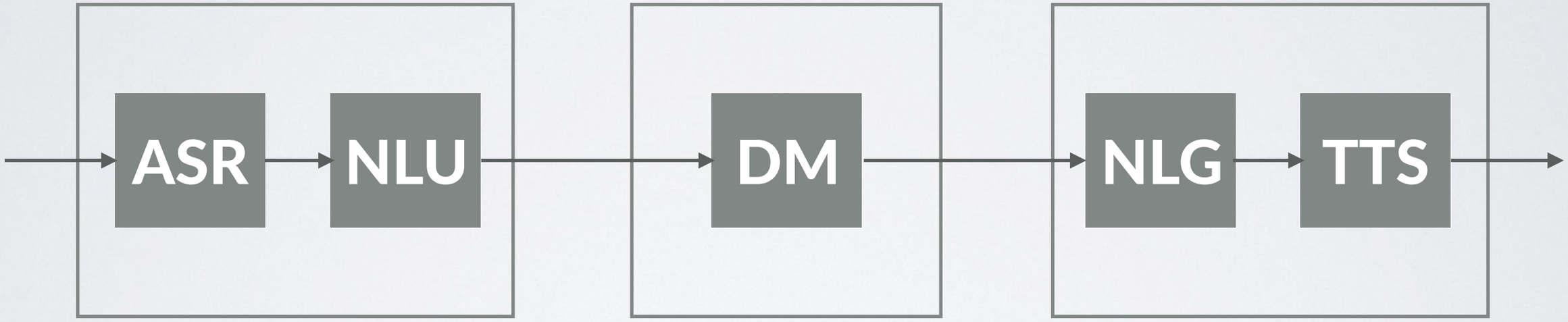
SMART HOMES

ROBOTS

Baseline architecture

for Conversational Interaction

Understanding | Dialog management | Generation



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Extensions and improvements

over the baseline architecture

- Shared information storage or a blackboard
- Send other messages
- Asynchronicity
- Incrementality
- Compactness and low level integration

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Building Conversational Interactive System is
A CHALLENGE

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We need

A MULTI DIMENSIONAL

approach

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We need

A MULTI DIMENSIONAL approach

- Computational Linguistic Dimension
- Operative Dimension
- Communicative Dimension
- Business Dimension

CONVERSATIONAL INTERACTION FOR BUSINESS:

A Global Approach

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User

Business

User

Goals

Expectations

Personality

History

Communicative

Guidelines

Operational

Business

LEKTA

User

Goals

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Personality

History

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Guidelines

Operational

Business

API’s

Real World

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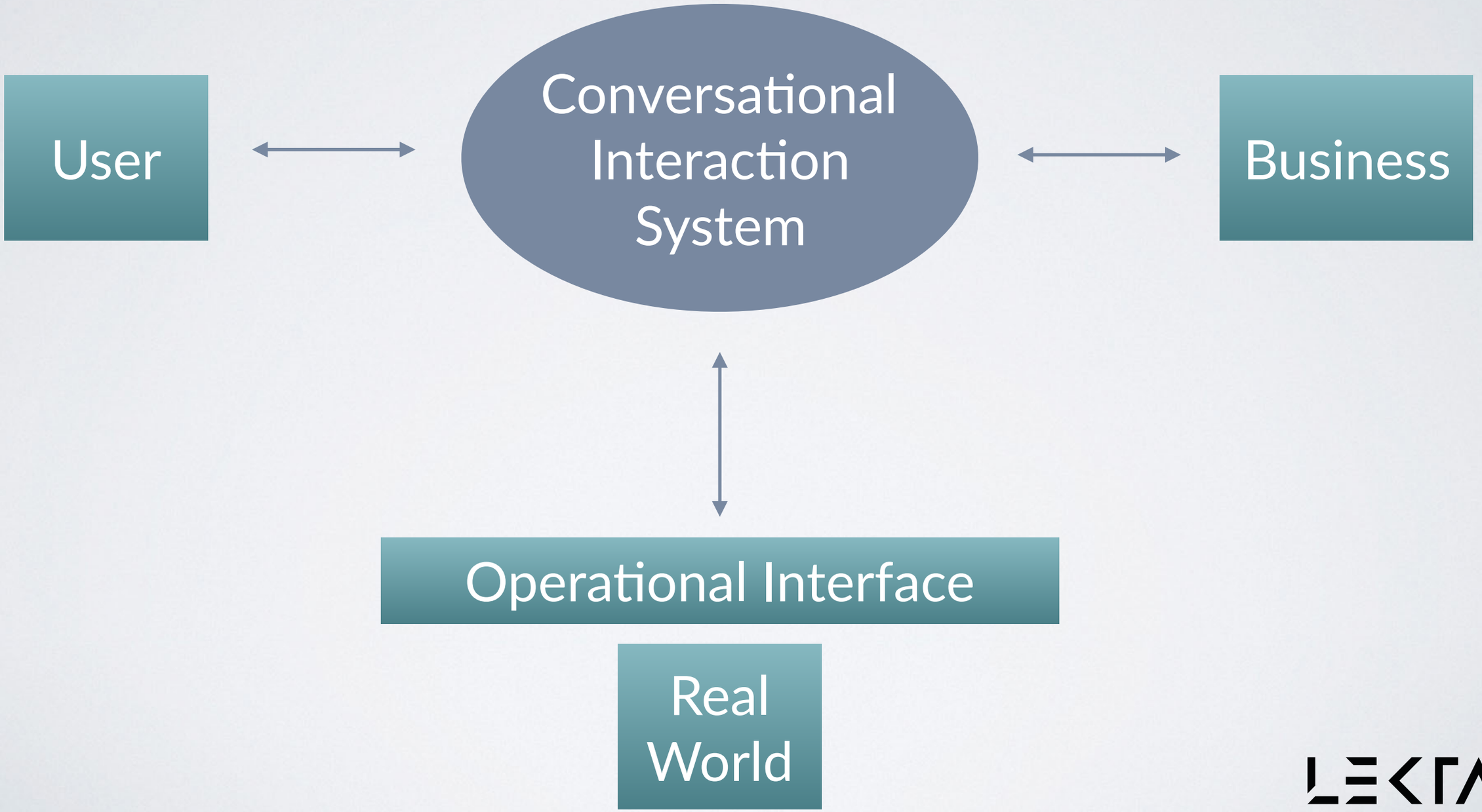
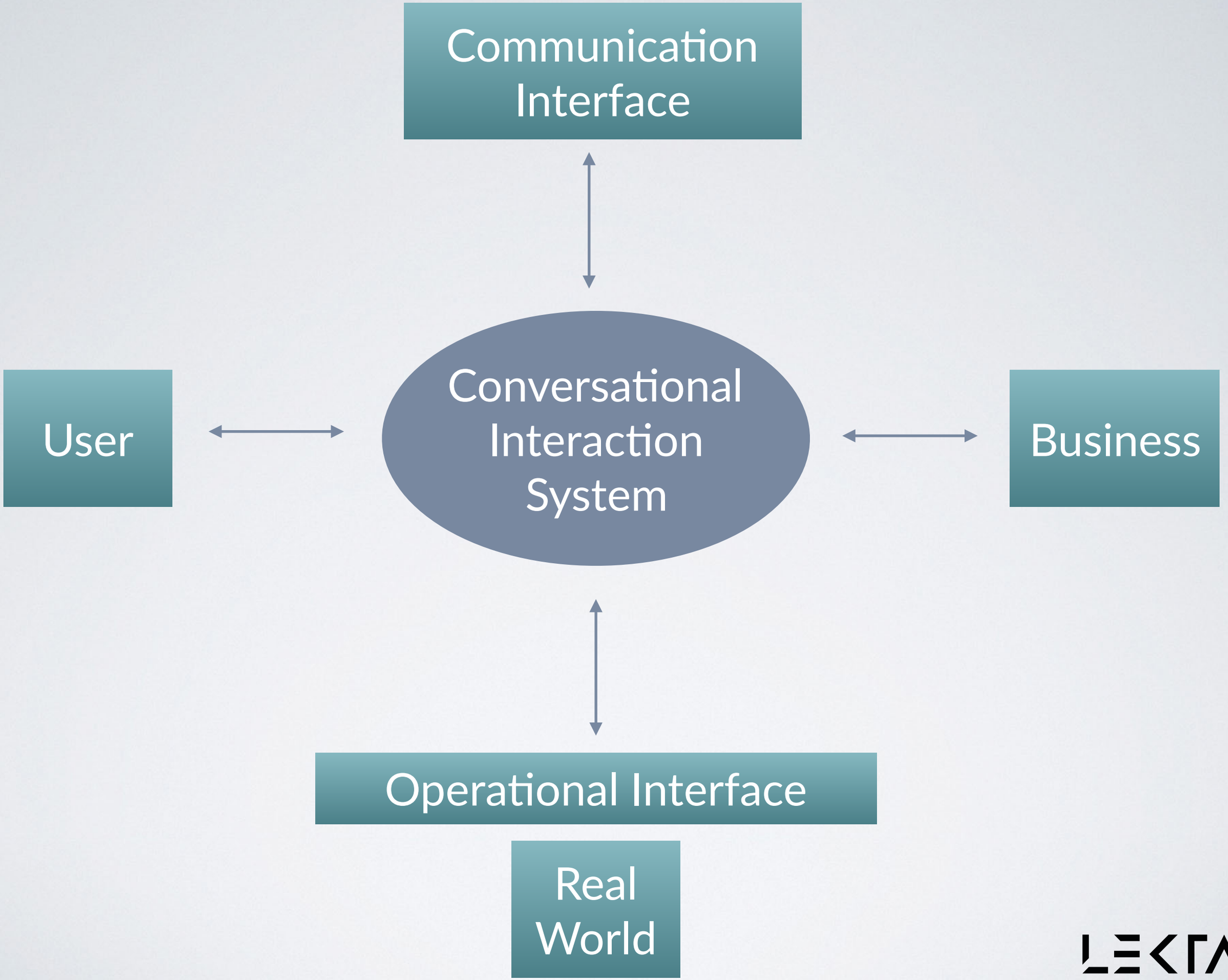
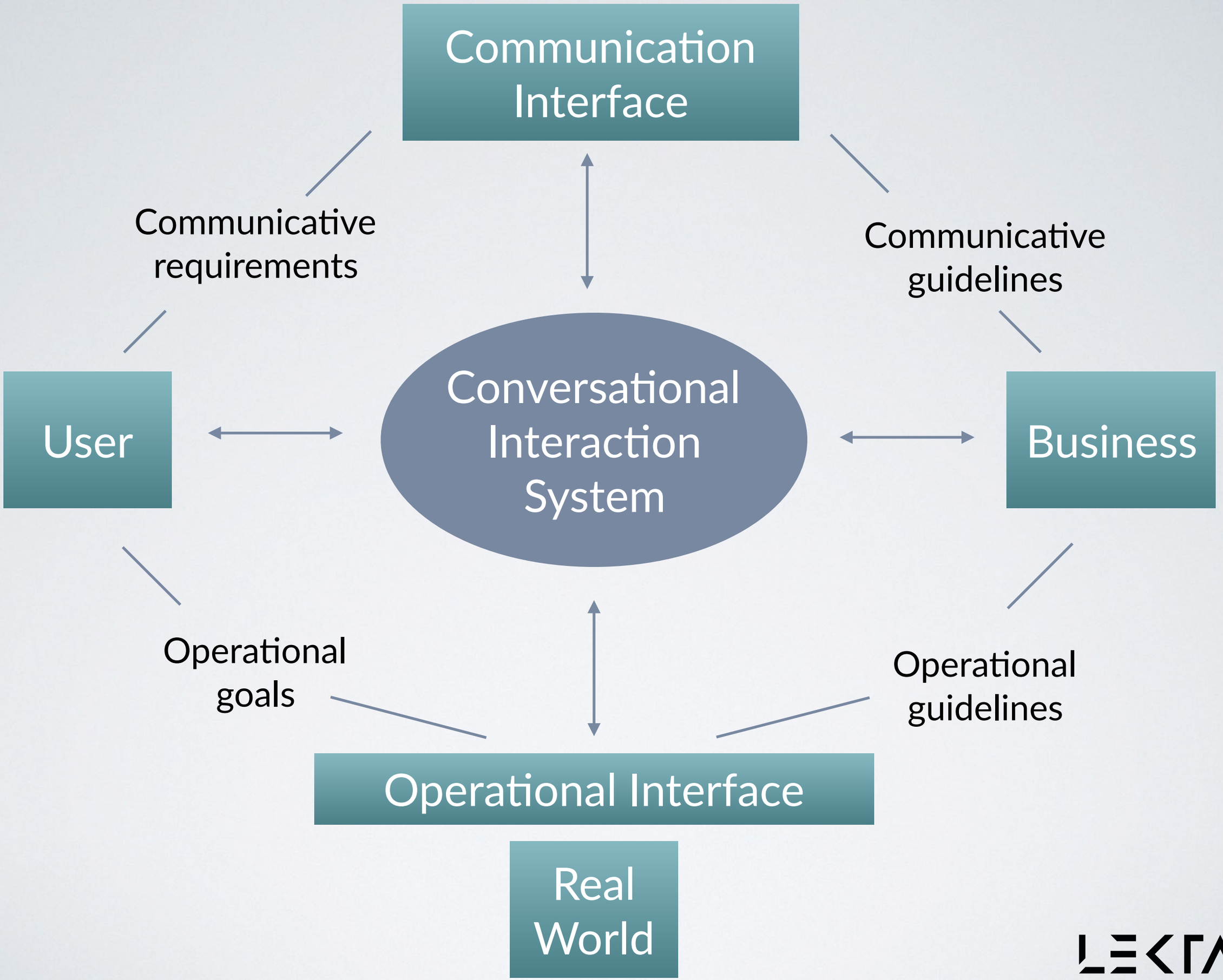
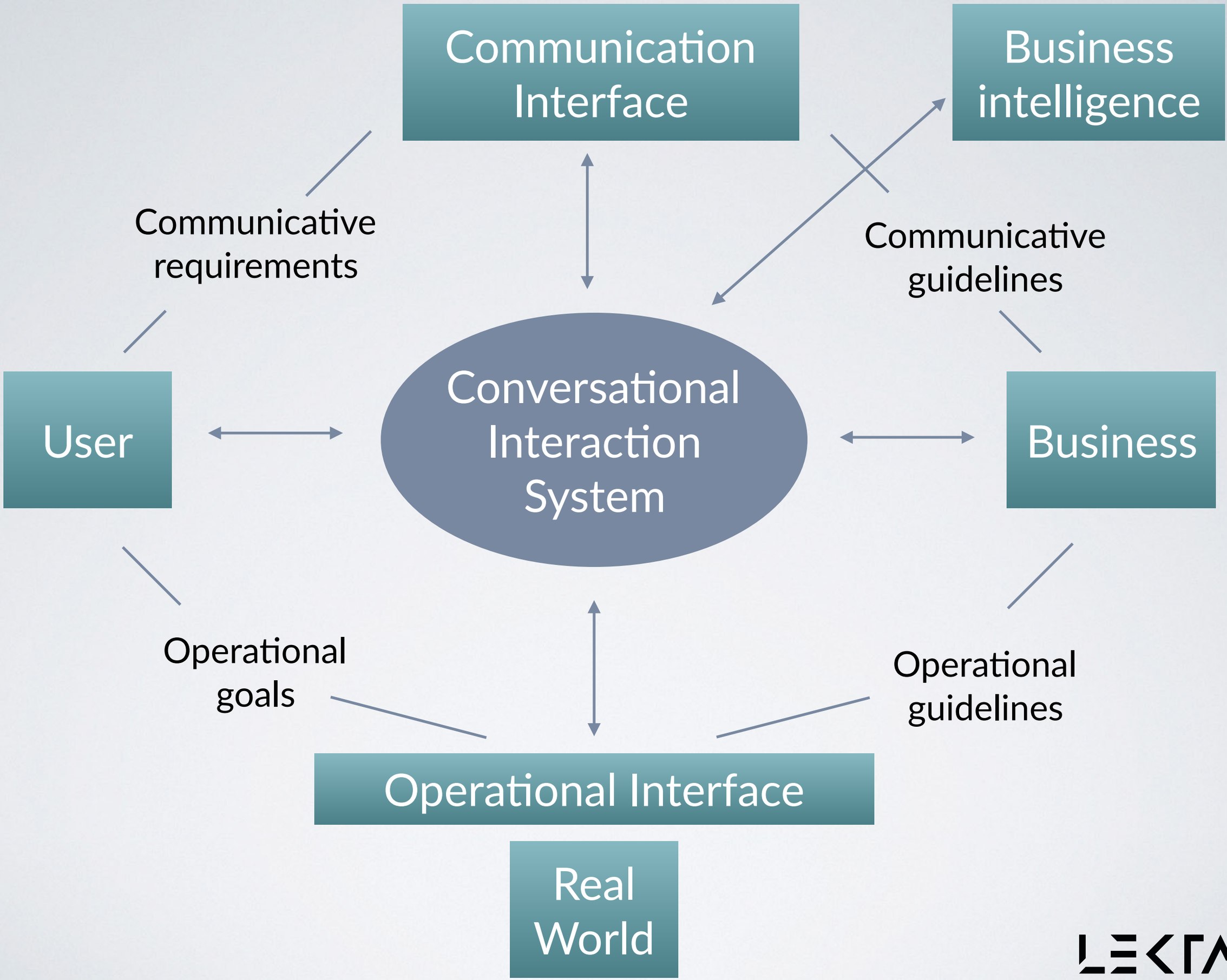

User
Conversational Interaction System
Business
Operational Interface
Real World


Communication Interface
User
Conversational Interaction System
Business
Operational Interface
Real World


Communication Interface
Communicative requirements
Communicative guidelines
User
Conversational Interaction System
Business
Operational goals
Operational guidelines
Operational Interface
Real World


Communication Interface
Business intelligence
Communicative requirements
Communicative guidelines
User
Conversational Interaction System
Business
Operational goals
Operational guidelines
Operational Interface
Real World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“Most of the APIs are good for getting started quickly and build MVPs (Minimum Viable Products). Once you get beyond that you may start experiencing the limitations. In general, algorithms behind the APIs are tailored for a single interaction, either a question-answer or a comand-action.”

A Review of Natural Language APIs For Bots
Conversate

https://medium.com/@Conversate/natural-language-apis-for-bots-e791f090e32f

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Critical Technical Limitations
of API's

- Lack of context.
- Very limited failure management.
- Inadequate dialogue optimization strategies.
- Difficulties to integrate expert knowledge.
- Low accuracy

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KEY FEATURES AND RESEARCH TRENDS

LEKTA AI as Language

LEKTA is able to manipulate the following Language-oriented phenomena

- Language detection and adaptation
- Interface and multi-modality integration
- Natural Language Understanding
- Dialogue Management
- Natural Language Generation
- Low-level integration and interoperability

LEKTA AI as Engineering

- Real-time Conversational Engine
- Integration and Interoperability
- Robustness, Scalability
- LektaCS (Cloud Service)

LEKTA AI as Knowledge

- Knowledge Representation
- Knowledge Manipulation and Reasoning

LEKTA AI as Technology

- Integrated Development Framework
- APIs for Real-time integration with External Resources and Events
- LektaBI: Lekta Business Intelligence

LEKTA AI as Automation

- Administration
- Monitoring

FLUENCY

Fluency is a dialogue engine implemented over LEKTA version 2

The main goals of this engine are robustness, flexibility and reusability.

Fluency

- Dialogue Memory and Context Representation
- Incremental Approach for Understanding, Dialogue Management and Generation
- Event-oriented Runtime Engine
- Expectation-driven Understanding and Interpretation
- Disambiguation and Adaptation techniques for multi-purpose and open domains
- Detection and annotation of Operative and Communicative Strategies

Thank You

www.lekta.ai