Tellilink Web Agents
What are we building and what problem are we solving.

- Tellilink is developing the next generation of semantic agents. These agents will communicate with each other and with people using controlled natural language. They will enable the automated exchange of schema and rules.

- The consumption of services in a services oriented architecture has proven to be a time-consuming and fragile process. Tellilink semantic agents will automate the consumption of services by enabling machines to integrate with each other in real time rather than having programmers solve integration problems at design time.
Systems with/without Agents

- SOA endpoint provides Service data (xml) consumes Business application
- SOA endpoint provides Service data (xml) consumes Business application
- SOA endpoint provides English Custom code to consume/transform data
- SOA endpoint provides English Agents automatically consume/transform data
- Web Agent

INTELLIGENCE & INFERENCE FOR THE SEMANTIC WEB
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Opening a Conversation between Agents

John S.

How do I find a flight, a hotel, and a car?

Send this structure:

- Someone going to somewhere.
- Someone leaving from somewhere.
- Someone making type of trip.
- Someone departing on date.
- Someone departing at time.
- Someone returning on date.
- Someone returning at time.
- Someone is an adult.
- Someone is a senior.
- Someone is a child.
Reply

John B. Smith data, rules, and instructions

John departing on 7/6/08.
John departing in the morning.
John leaving from DCA
John going to Chicago.
John returning on 7/8/08.
Find a flight, a hotel, and a car.

If business class connecting flight is less than non-stop coach flight, then select business class connecting flight.

If flight has more than 1 connection, then flight is too difficult.

If flight duration is greater than 10 hours, then flight is too long.

If flight leaves before 8:00 AM, then flight is too early.

If flight leaves after 8:00 PM, then flight is too late.

<table>
<thead>
<tr>
<th>Standard, controlled, natural language</th>
<th>Enterprise API field names</th>
</tr>
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<tbody>
<tr>
<td>going to</td>
<td>fitTo</td>
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<tr>
<td>leaving from</td>
<td>fitFrom</td>
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<td>departDate</td>
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<tr>
<td>departure time</td>
<td>departTime</td>
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<tr>
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<td>returningDate</td>
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<tr>
<td>return time</td>
<td>returningTime</td>
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<td>numAdults</td>
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<tr>
<td>number of seniors</td>
<td>numSeniors</td>
</tr>
<tr>
<td>number of children</td>
<td>numChildren</td>
</tr>
</tbody>
</table>
Collecting Customer Rules

Customer rules
- If flight leaves before 8:00 AM, then flight is **too early**.
- If flight leaves after 8:00 PM, then flight is **too late**.

Travel Site rules
- If flight is **too early**, then do not select.
- If flight is **too late**, then do not select.
- If flight is **too long**, then do not select.

Travel Ontology
- Desirable
  - Early
- Undesirable
  - TooEarly
  - TooLate
  - TooLong

rules4J semantic rule engine

John S
Personal Web Agent
Selected Flights
Market Opportunities

- There are two markets for the technology: The first is the existing market for SOA products and implementations. Tellilink will target this market first as a proving ground for the technology. We want to change how people think of web services.
- The second is the commercial, on-line retail market. Any company that sells products on-line will benefit from having a semantic agent to respond to customer agents and capture customer rules.
Customer Benefits

Technical Benefits

• The time and effort to integrate new services goes away.
• Agents automatically transform specific system schema to and from controlled English.
• Agents communicate with people and with each other entirely in English.

Business Benefits

• Better cross-sell and up-sell.
• Real-time voice of the customer.
• Make use of new services faster.
• Reduce system operations and maintenance cost by lowering cost of change.
Competition

• The primary direct competitors will be existing rule engine vendors who have experience selling product into the SOA market: IBM, Redhat, Oracle, etc. They are not selling a competing product, but they are selling a competing solution and they have an established professional services business.

• Other competitors will likely emerge from the work of researchers at universities. Carnegie Mellon University and Stanford are dominant. They will have a competing products but will struggle to position them as commercial software and will need to build a professional services business.
How do we make money

- Tellilink will license semantic web agents through direct sales and sell professional services.
- The goal of professional services is to facilitate license sales, not to sell services.
Risks

• Enterprise customers might be slow to accept and to devote resources to such a new idea.
• The technology must be simpler than it is today. There is the risk that complexity will drive customers to simpler solutions to the problem.
Funding sought

- FY ‘10 - Tellilink needs $1 million U.S. dollars of angel funding to complete development of first agent release.
- FY ‘11 - Tellilink needs $6 million U.S. Dollars in first round funding for further development, to build the management team, and to market the product.