



# Penan's Oroo' Short Message Signs (PO-SMS): Co-design of a Digital Jungle Sign Language Application

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# Presentation content

- Indigenous Language preservation
- Research context
- Oroo': secret jungle sign language
- Oroo' documentation
- Oroo' digitalization
- Co-design of Oroo' app with Youth

# From Namibia to Borneo





# Collaboration







# Revitalizing Indigenous Languages

- Languages are major carriers of culture and worldviews
- Languages can be sustained only if used in every day's life
- Digital documentation often not accessible or attractive to indigenous communities
- Connecting indigenous people, via their own traditional forms of communication has not been prominent in current trends of innovation and technology design.

# Context: Borneo island



Kuching

Long Lamai





# Context: Reaching the community





# Context: Partner Community

- 113 Households with 500 + population
- Church, Primary School, Health clinic
- No electricity but piped water
- Semi Nomads





# Context: Project Collaboration



**Telecentre since 2009**

# Forest walks with Garen

*“If you don’t know about your origin [forest],  
you are not a Penan”*





# Understanding Knowledge Patterns

## Toro: A journey to the forest



- **Collecting livelihoods... food and medicine etc.**



- **Activity based platform for knowledge transfer between elder and younger ...hunting techniques, making hut, fishing, characteristics of the plants etc**



- Loss of knowledge;**
- **Rapid change in the way of Penans' life**
  - **Reluctance of elders to transmit IK to uninitiated youth**



# Toro Journey







We are from the same group. I'm alone, very very hungry and I have only water to survive. I am going to the river in this direction. Follow me and if you have anything to eat please bring

The header features a light green background with several circular vignettes containing illustrations of rainforest elements: a bird, a tree trunk, a branch with leaves, and a long, thin branch.

# Oroo': the Sign Language of Penan

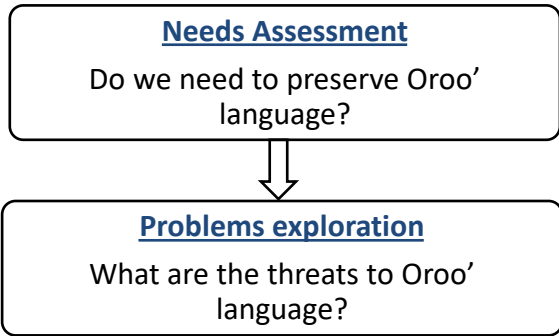
- Sophisticated Signage Language of the Penans
- The signages made out of rainforest materials, such as twigs, branches, and leaves
- Extremely flexible and constructed on the spot
- Through different combinations of the elements new meanings could then be constructed



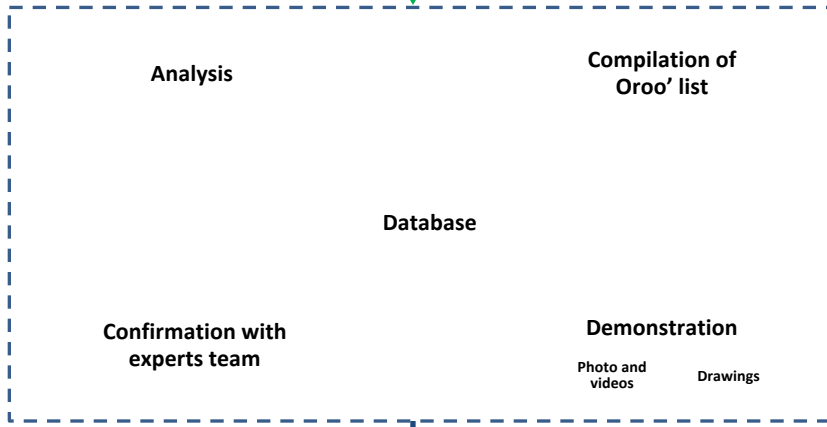
# Connection



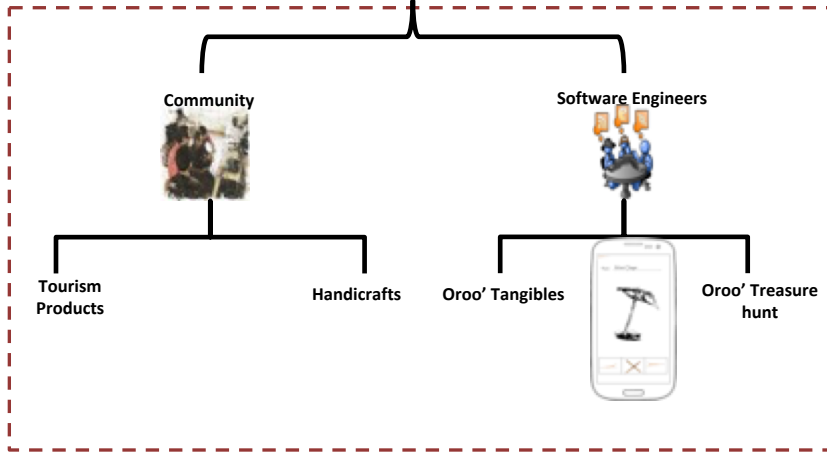
**Stage 1. Hypothesis Formation**



**Stage 2. Documentation**



**Stage 3. Digitalisation and Preservation**





# Oroo' sign collection

Sign:



# Oroo sign categorisation





# Oroo' Tangibles and Oroo' Adventure game





# Revitalising Oroo'

- Elders concerned about lack of knowledge and interest by the youth in the language
- Youth drawn towards technology-driven communications.
- Thus the idea of an Oroo' messaging app arose within the discussions in the village.
- Co-design with Youth agreed



# Persona creations

<p><b>Vasper</b>            -26 years            -Camera Man            -From Long Lamai            -So handsome            -Like Jungle Trekking            -Funny Guy            -Friend of us            -Love Long Lamai and Jungle            -Skinny man            -Hardworking man            -Creative man            -Christian man</p> 	<p><b>Rebecca</b>            -18 years old            -Volleyball            -Singing            -Friendly            -Hillary's friend            -Working at the Telecentre            -From Long Lamai            -Loves creating handicraft            -Loves surfing internet</p> 	<p><b>Clarisse</b>            -25 years old            -Working at Bario            -Love Long Lamai            -From Long Lamai            -So friendly            -Very Kind            -So pretty            -Hard work            -Know how to cook            -Like fishing and singing            -Friend with Erna, Shida, Azlyn</p> 
<p><b>Damon</b>            -20 years old            -Pastor            -Football            -Fishing            -Reading            -Friendly            -Vincent Friend</p> 	<p><b>Cassandra</b>            -40 years            -Handicraft            -Housewife            -Kind person            -Loves to swim            -Strict mother            -Hardworking lady            -From Long Banga            -Love Long Lamai            -Backup singer in church</p> 	<p><b>Alavick</b>            -42 years old            -Boat driver            -Tourist guide            -Reading Bible            -Kind and ugly man            -Garren's friend            -From Long Puak            -Working at clinic Long Banga</p> 



# SMS composing



Within less than 15 minutes  
89 sms texts created  
one third in Malay and the rest in  
English.



Sample sms:

“What are you doing?”  
“Let’s meet at the river”  
“what do you mean?”



# Creating new signs





# New Signs created



# Sign categorisation

- Activities: waiting, fishing, meeting, pick nick, going
- State: are you hungry? hungry, not hungry, are you fine?, fine, not fine
- Objects: house, plane
- Living beings: person, monkey, boar, friends



# PO-SMS: App Screen Layout Design





Thank you and Jian Kenin



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