

I PRO 309
Orthotics and Prosthetics in Latin America



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agenda

IPRO 309 Background
Project Goal
Team Organization / Deliverables
Subgroup Goals
 Technical
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background

agenda

- **Orthotic:** Devices that support or correct musculoskeletal deformities/ abnormalities of the human body.
- **Prosthetic:** Artificial extension that replaces a missing body part.
- **2.5 million people in need of Orthotic and Prosthetic care in Latin America**
- **I PRO 309 started in spring 2006**
- **Only 50 International Society for Prosthetics and Orthotics (ISPO) Certified Orthotic and Prosthetic practitioners in Latin America**
- **Only 1 ISPO accredited program in Latin America (Don Bosco University, El Salvador)**
- **Centro Don Bosco, Laboratorio Gilete**

IPRO objective

background

Orthotic Services

orthotic services

clinical facility

shop

“off the shelf”



“custom made to measurement”
(not available in Colombia)



“custom fabricated”



IPRO objective

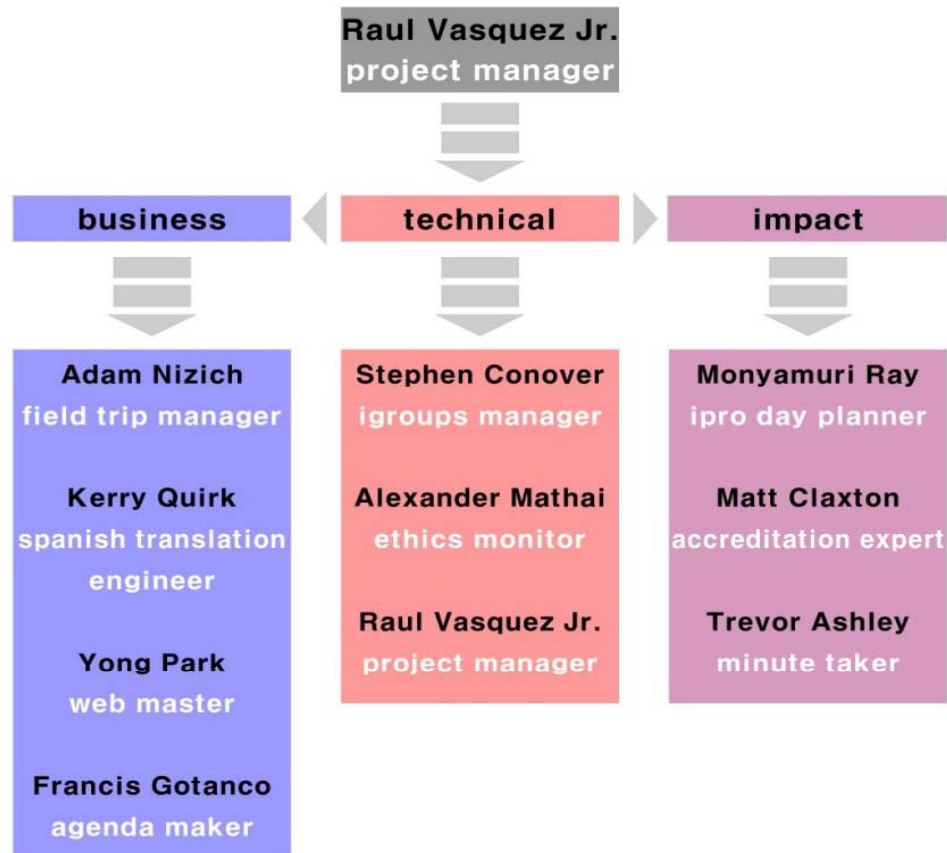
background

- Investigate possible alternative production methods for temporary cost-efficient Orthotic and Prosthetic Devices
- Create a business model to be considered by an Orthotic and Prosthetic facility in Bogotá, Colombia to provide custom made to measure lower limb orthotics
- Design self-sustaining funding sources for the technical school at Centro Don Bosco
- Inquire into the social and economical impact created by future improvements in Orthotic and Prosthetic availability and awareness in Latin America

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team organization

IPRO ob.



sub group goals

team orga

Technical

- To develop feasible method for fabrication of temporary orthoses. The group will also develop a product line for the business model and understand all other technical aspects of Central Fabrication.

Business

- To develop a model for implementation of a Central Fabrication program at Centro Don Bosco. This program will cover organization, management, work study program, marketing, etc.

Impact

- To focus on promoting Telemedicine in Colombia with local clinics. The group will also research methods of promoting orthotic and prosthetic care and careers in Latin America

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technical

sub group goals

temporary orthosis

- The production of a temporary orthotic onsite could allow the patient to receive immediate orthotic care.
- This would also allow the patient to have an orthosis while waiting for the delivery of the permanent orthosis.



Prototype 1:

Soccer shin guards – Some shin guards can be heated and molded to fit.

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technical

sub group goals

temporary orthosis

Prototype 2:

Friendly Plastic – small beads which are heated in water and create a moldable plastic.

This would allow for a more freeform method of orthosis fabrication. However, this method proved infeasible.



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technical

sub group goals

central fabrication

Central Fabrication can be implemented to handle the heavy workload of production for orthotics that small clinics cannot. The program will be the first of its kind in Bogotá.

- 1) A patient meets with a clinician and a orthometry form is filled out listing the complete measurements of the part of the body needing the orthosis.
- 2) The measurements can be called in, faxed, or e-mailed over to the Central Fabrication Lab.
- 3) The orthosis is delivered to the patient in a few days. Generally, for a typical knee ankle foot orthosis the turnover time can be as low as 2-3 days.

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business

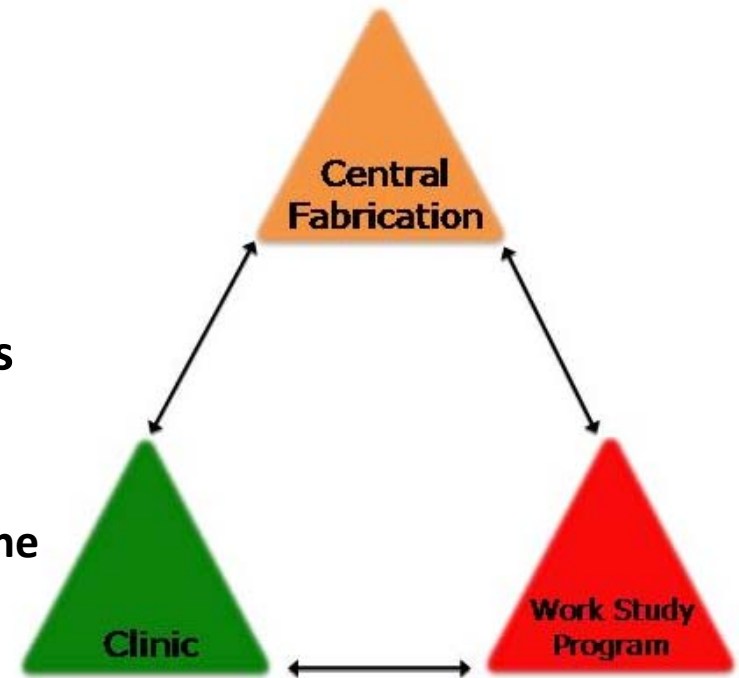
technical

deliver

work study program

- Experience for Students
- ISPO Certified Training
- Production of Quality O&P Products

This flow chart to the right shows how the clinic, work study program, and central fabrication would interact with and depend on each other



Central Fabrication Project Overview

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business

technical

deliver

pay & experience

- Funds earned from sale of made to measurements O&P Products
- Students earn pay for work
- Part of Financial Aid Package

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business

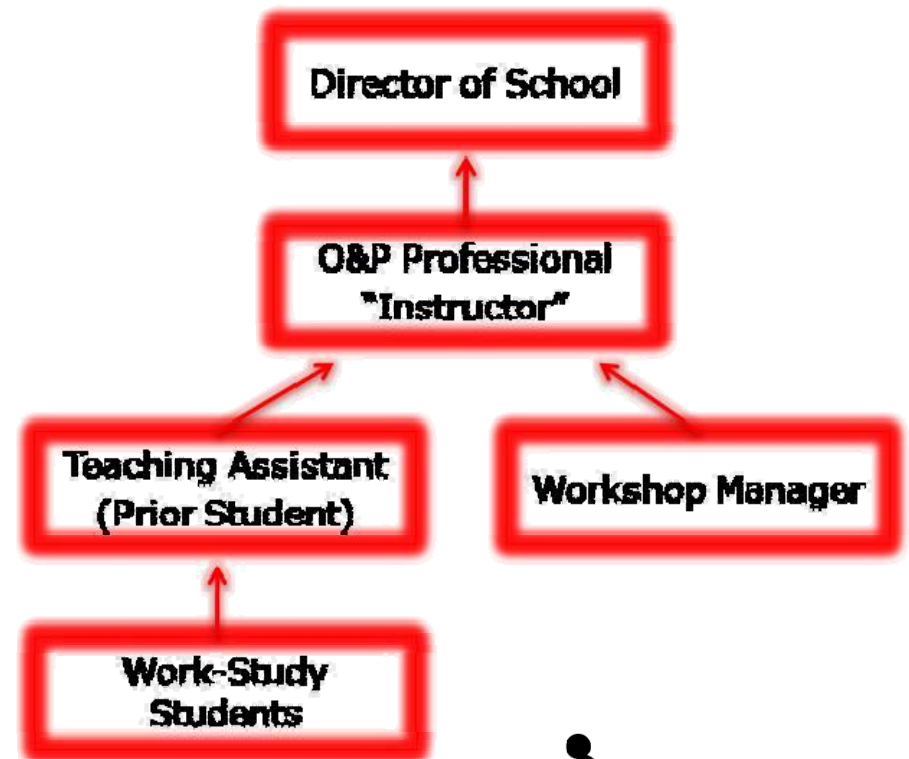
technical

deliver

program management

- Focus on Quality Control
- Review of work
- Cash Flow Management

Management Structure



ult

impact

business

technical

make o & p as profession:

- Expected Orthotics use by 2020=7.3 million (Approx)
- Expected Prosthetic use by 2020=2.4 million (Approx)
- Out of 5484 Practitioners , 1100 are 55 or older

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impact

business

technical

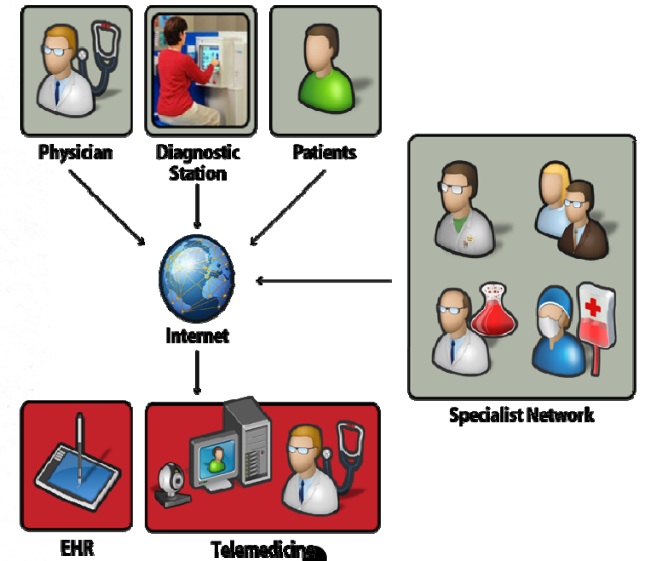
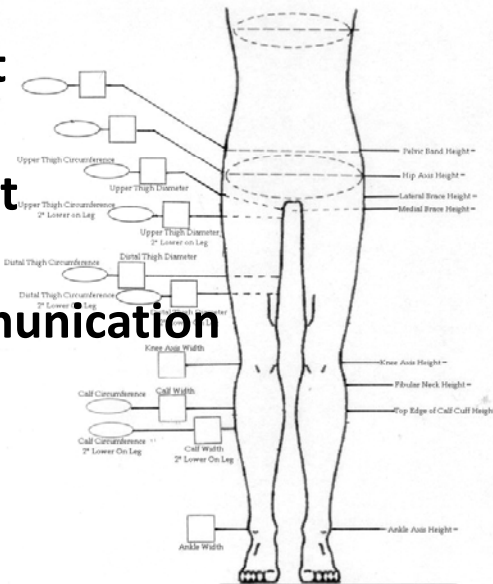
telemedicine

• “Remote applied medicine”, including diagnosis, treatment and education

• Reduces Cost

• Time efficient

• Global Communication



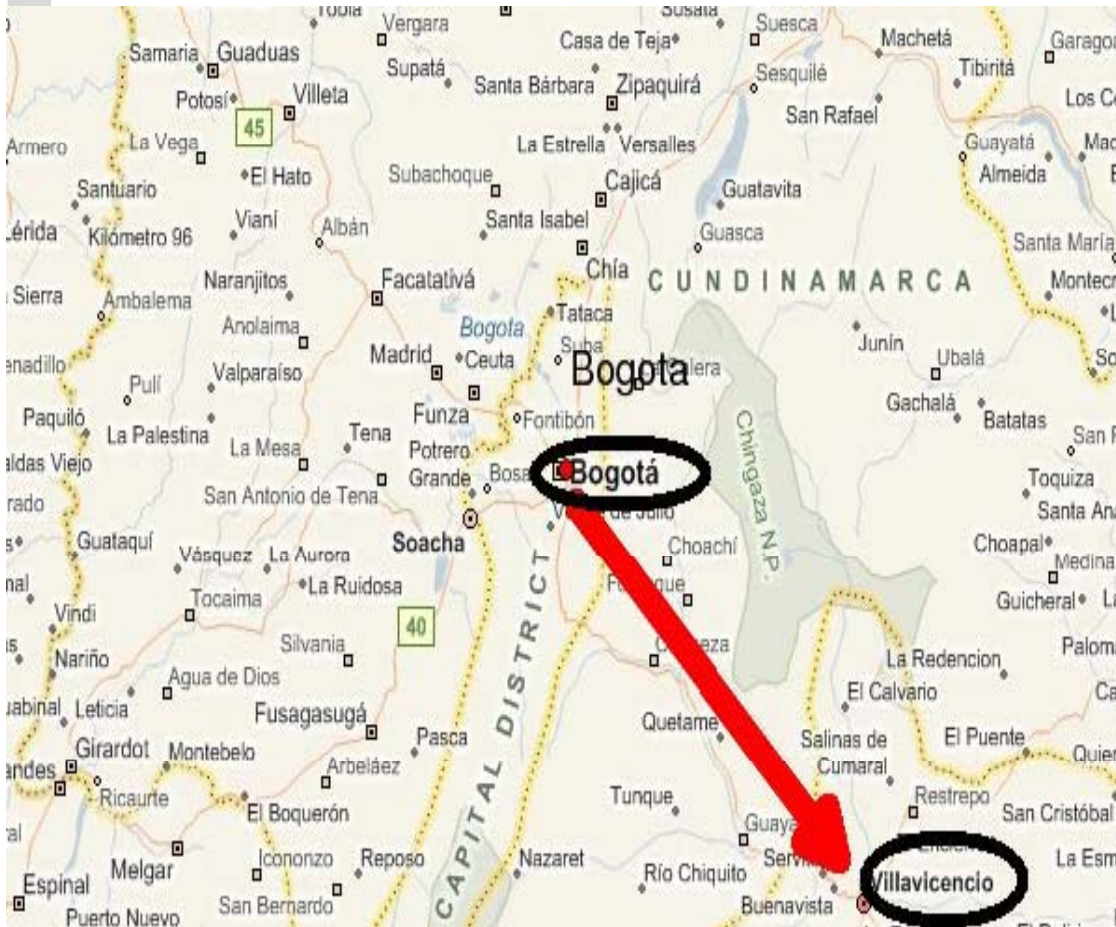
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impact

business

technical

Case Study-Clinic in Villiavencio



**1. Integrated with
Laboratorio Gilete**

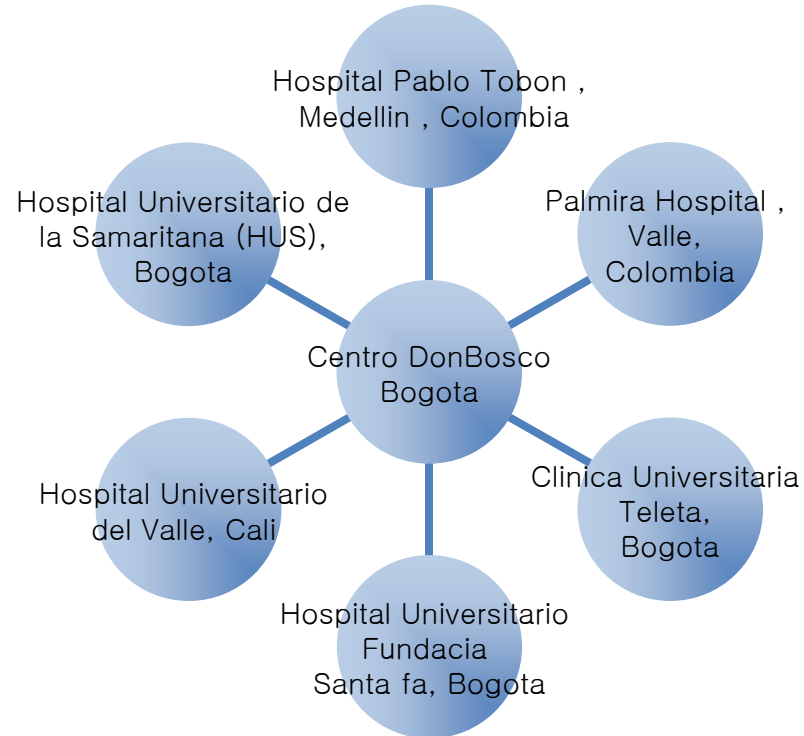
**2. Once a month visit fo
r outpatients.**

ult

impact

business

technical



**Market Analysis for Central Fabrication for Centro Don Bosco
with clinical facilities around Bogotá.**



it **recommendation** impact bu

- **Further exploration of thermoplastics materials for fabricating a temporary orthoses**
- **There needs to be more work done in revising and designing a beta prototype of the Central Fabrication program**
- **Orthotics and Prosthetics education in Latin America, is in need of a revolution. There is still only one third of patients getting the proper orthotic and prosthetic care.**

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summary

acknowledgement



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questions?

summary

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