COST MODELING FOR COMPOSITE PRODUCTION

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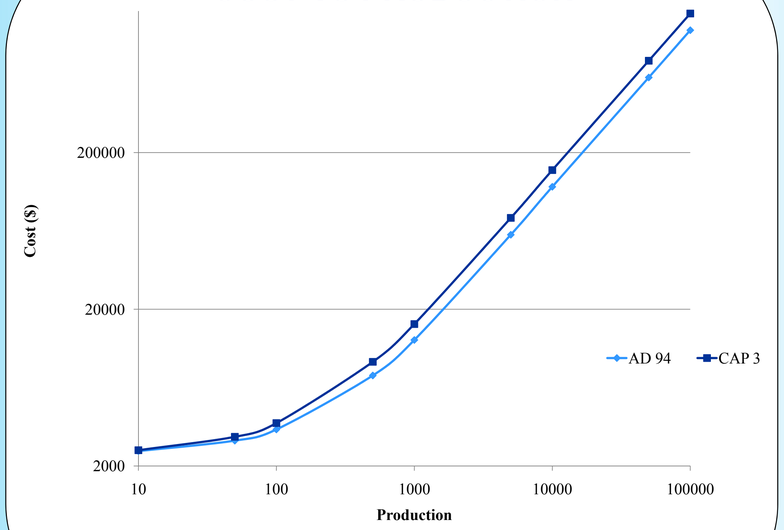
OVERVIEW

- The purpose of this research was to create an activity based cost model for composite production
- The premise is to compare all of the different possibilities for producing the part on a cost basis
  - Different processes can be used (such as hand lay-up, compression molding, etc.)
  - Different materials can be used for the various pieces of the composite part
- Volume cost metrics were obtained from vendors to ascertain the most beneficial production output between different materials
- Differences in material cost, direct labor costs, and capital costs are all taken into consideration when comparing all possible production possibilities

COST VS PRODUCTION



SCREENCAP OF SYSTEM

Recipie 1: Direct Labor

Kitting/Setup

Worker Title	Wage Rate	Operation 02-1	Operation 02-2				
Technician	11	0.07	0.03				
Total		0.066666667	0.033333333	0	0	0	0

Tile Prep

Worker Title	Wage Rate	Operation 03-1	Operation 03-2	Operation 03-4	Operation 03-5	Operation 03-6	Operation 03-7
Technician	11	0.18	0.06	0.42	0.03	0.05	0.04
Total		0.183333333	0.058333333	0.416666667	0.033333333	0.05	0.041666667

Tool Prep

Worker Title	Wage Rate	Operation 04-1	Operation 04-2	Operation 04-3	Operation 04-4		
Technician	11	0.033333333	0.016666667	0.016666667	0.15		
Total		0.033333333	0.016666667	0.016666667	0.15	0	0

Demold

Worker Title	Wage Rate	Operation 09-1	Operation 09-2	Operation 09-3			
Technician	11	0.066666667	0.05	0.166666667			
Total		0.066666667	0.05	0.166666667	0	0	0

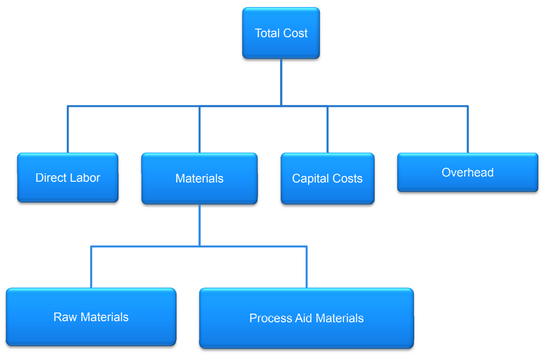
Assembly/Integration

Worker Title	Wage Rate	Operation 05-1	Operation 05-2	Operation 05-3	Operation 05-4	Operation 05-5	Operation 05-6
Technician	11	0.1	0.016666667	0.133333333	0.075	0.016666667	0.05
Total		0.1	0.016666667	0.133333333	0.075	0.016666667	0.05

Quality

Worker Title	Wage Rate	Operation 12-1	Operation 12-2				
Technician	11	0.05	0.05				
Total		0.05	0.05	0	0	0	0

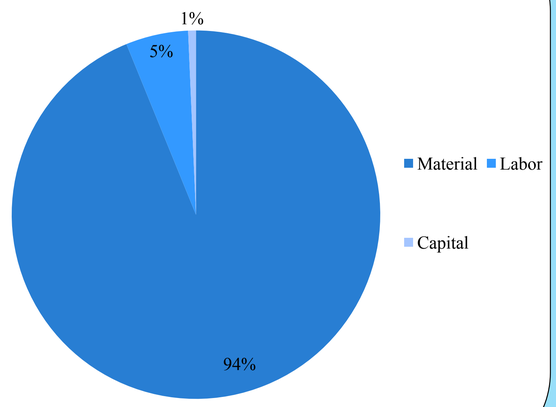
ACTIVITY BASED COST MODEL



ACTIVITY BASED COSTING

- An activity based cost model was used in order to determine where the costs originate from
- It helps reflect the demands that cost objects make on the project
- The activities are broken up into direct labor, materials, capital and overhead costs.
- It is also broken up by production process and material recipe utilized.

COST ALLOCATION



SUMMARY

- Further analysis must take place
- More volume cost metrics must be obtained
- More processes and material combinations must be explored
- Cost options must be weighed against performance options

ACKNOWLEDGEMENTS

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