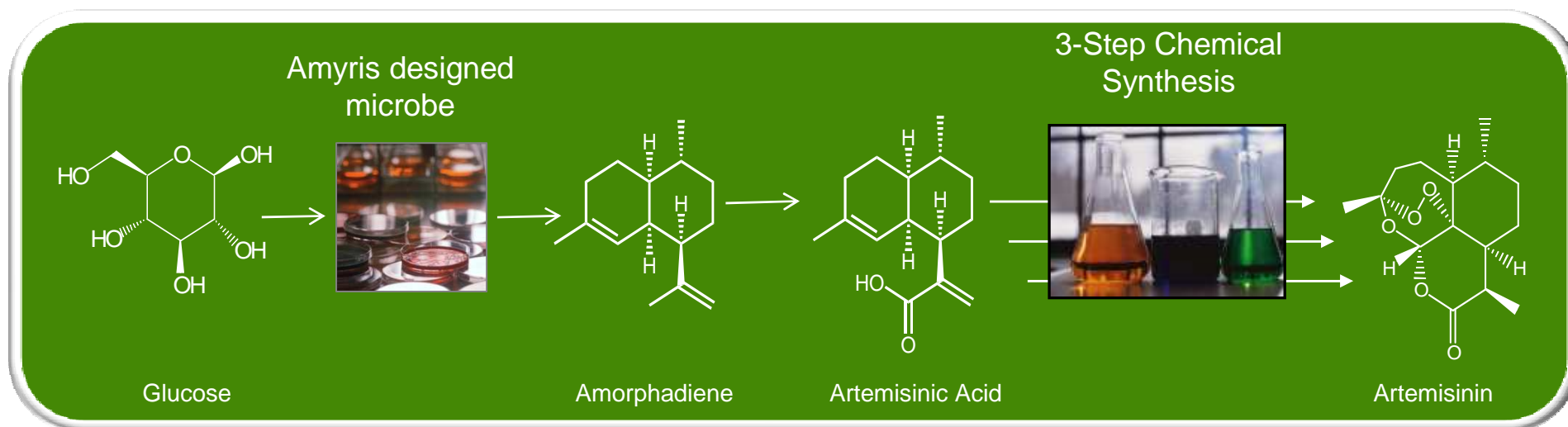


# Amyris and Synthetic Biology

July 9th, 2009

# Artemisinin Project

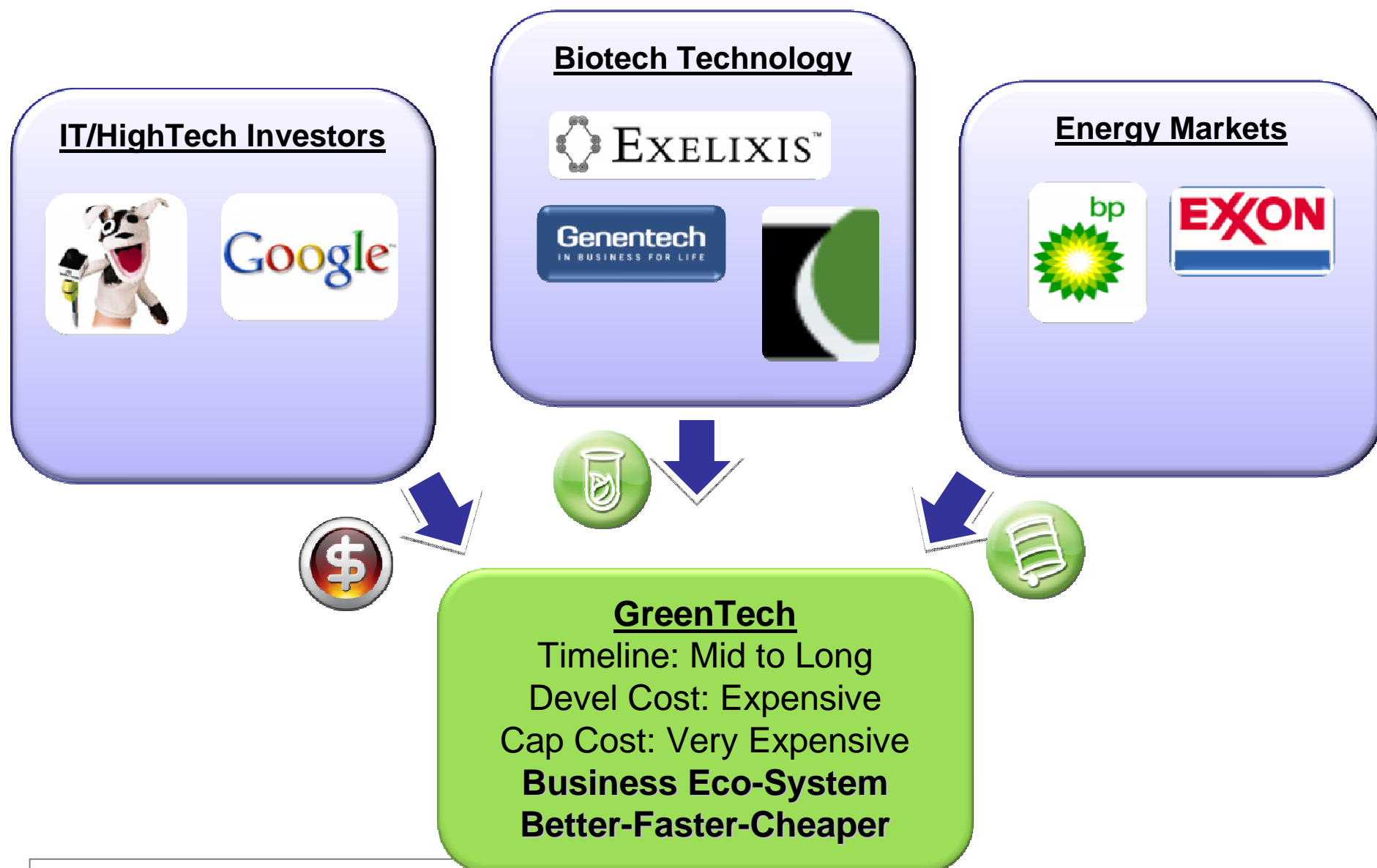
Done but not complete



- 5 year nonprofit project bringing low-cost artemisinin anti-malarials to developing countries
- \$200+MM/year potential savings in drug cost
- Significant lives saved due to scalable supply of less expensive drug

April, 2008 - Partnership with Sanofi-Aventis for scale-up, manufacture, and distribution of microbial artemisinin

# The CleanTech Casserole and Synthetic Biology



# Amyris Business

Develops and take to market advanced biofuels



## Amyris Fuels, LLC

- Take product from plant gate to wholesaler
- Logistics contracts to facilitate high volume distribution maximizing impact of Amyris renewable fuels

■ Amyris participation



Amyris Biofuels: Develop advanced biofuels using fully integrated scale-up capabilities

### Biology Labs



### Fermentation



### Chemical Processing



### Scale-up



### Personnel:

187 Full Time Employees

### Facilities:

100,000 sqft+ site in Emeryville, Ca

# Amyris Technology and Process

New Biocatalysts = New Products



## Biomass Production



Corn



Cane



Switch-  
grass



Sweet  
Sorghum

Harvest

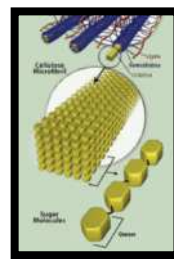
## Bio-Product Production



Biomass  
Processing



Milling



Cellulose  
Deconstruction

Microbe  
Food

Microbe  
Food

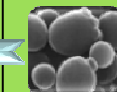
Biofuel  
Production



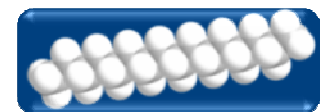
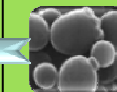
Fermentation



Fermentation



Change  
the  
Yeast to  
change  
the fuel



Advanced  
Hydrocarbon  
Biofuels



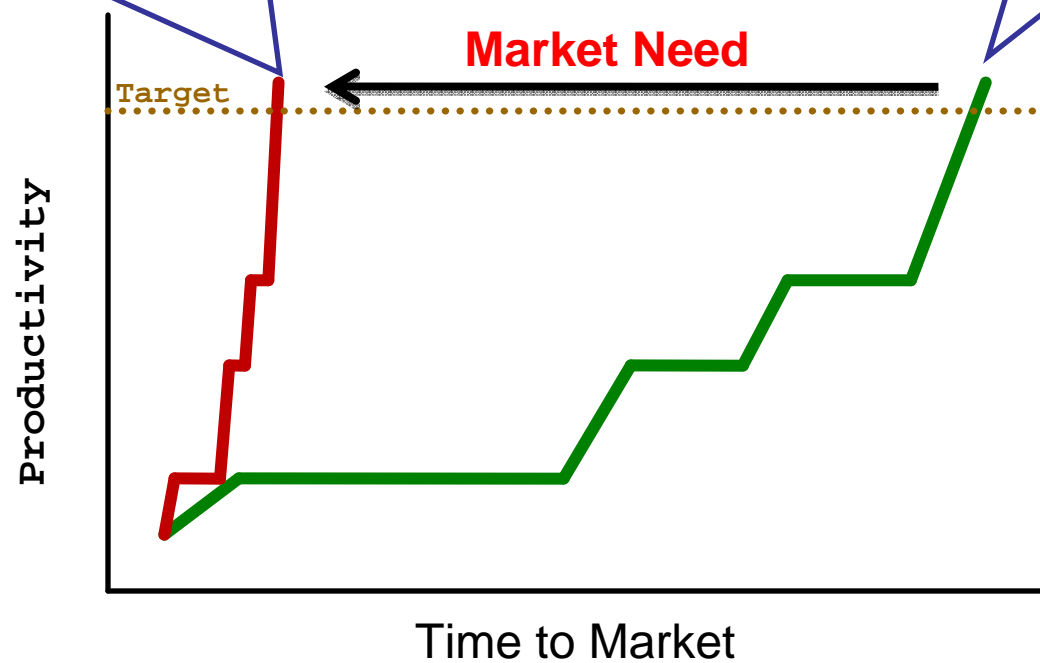
# Amyris Technology

Speed is key, The Best Tools will win



Fermentation-ready microbe construction has been a difficult, expensive and unreliable process

Rapid, High Fidelity microbe construction enables industrial fermentation for chemicals and fuels

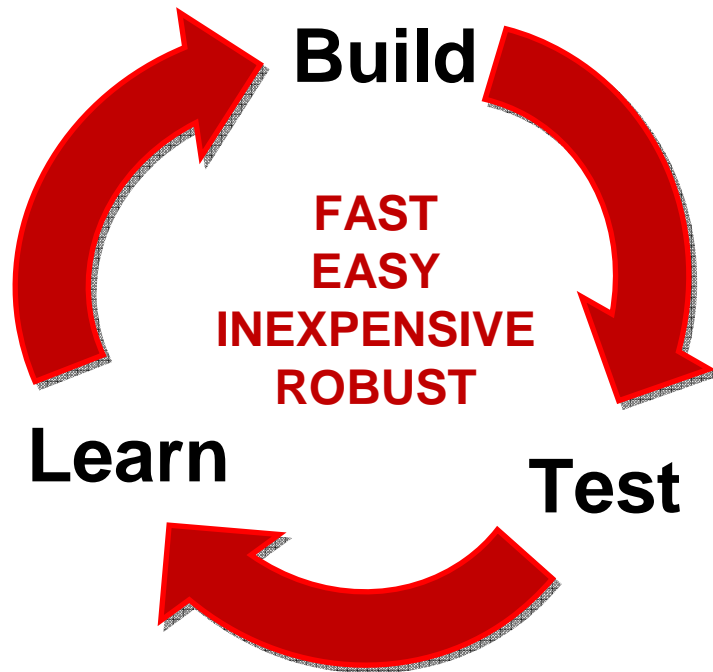


Microbes producing (vitamin /anti-oxidant)



# Amyris Technology

## Systematic microbe fabrication and Testing



- Each cycle is 4x faster
- Standardized HTP and Fermentation Testing
- 1000x more permutations tested/cycle

- ★ Computer Aided Design (CAD) system to plan



- ★ “Hands-free” automated microbe fabrication



- ★ HTP Screening & Metabolic-Profiling to Test





Thank you  
And come visit us in Emeryville

