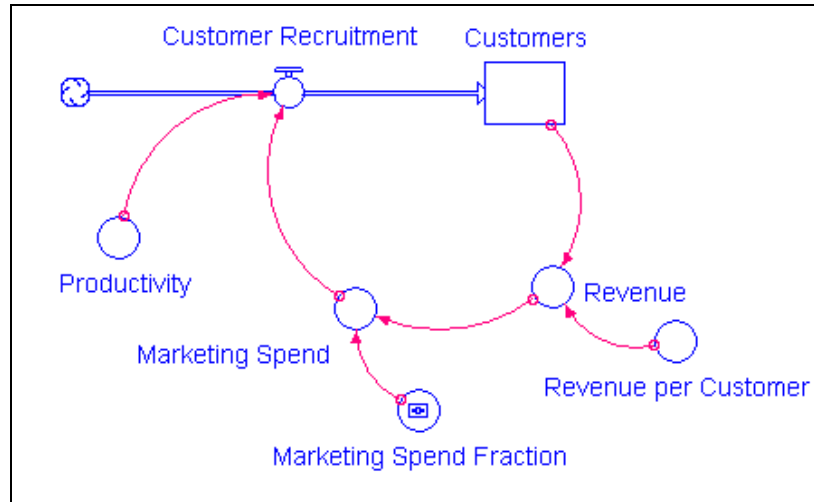


Customer Acquisition Dynamics

*“Getting Started with STELLA and iThink” Workshop
International System Dynamics Conference
August 2, 2007*

Presented by:
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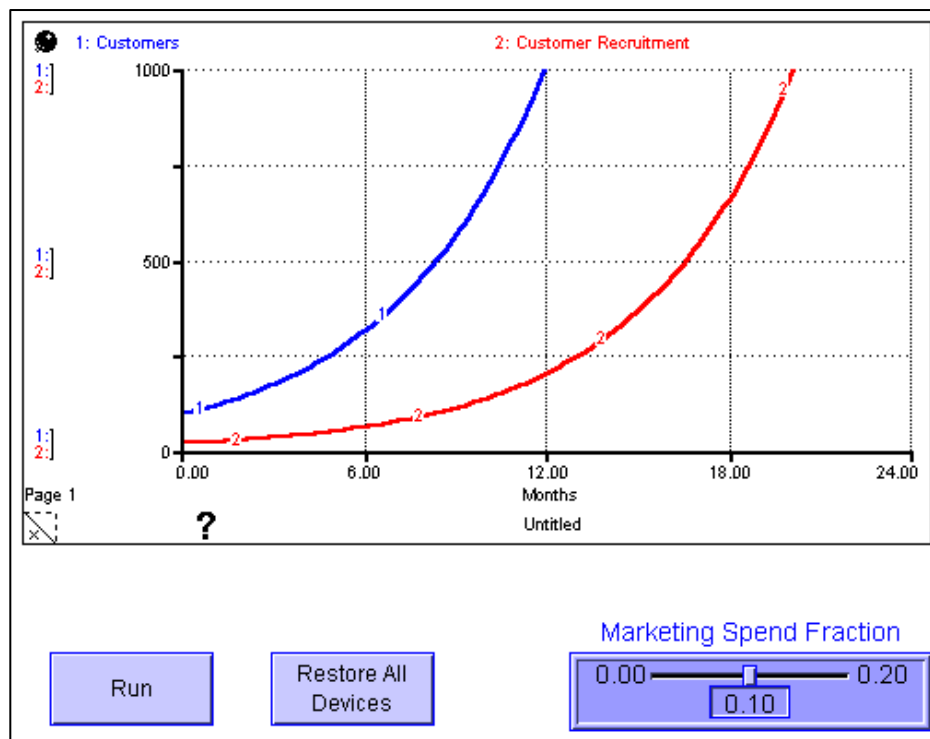
Customer Model 1 (Reinforcing Loop)



$Customers(t) = Customers(t - dt) + (Customer_Recruitment) * dt$
 INIT Customers = 100

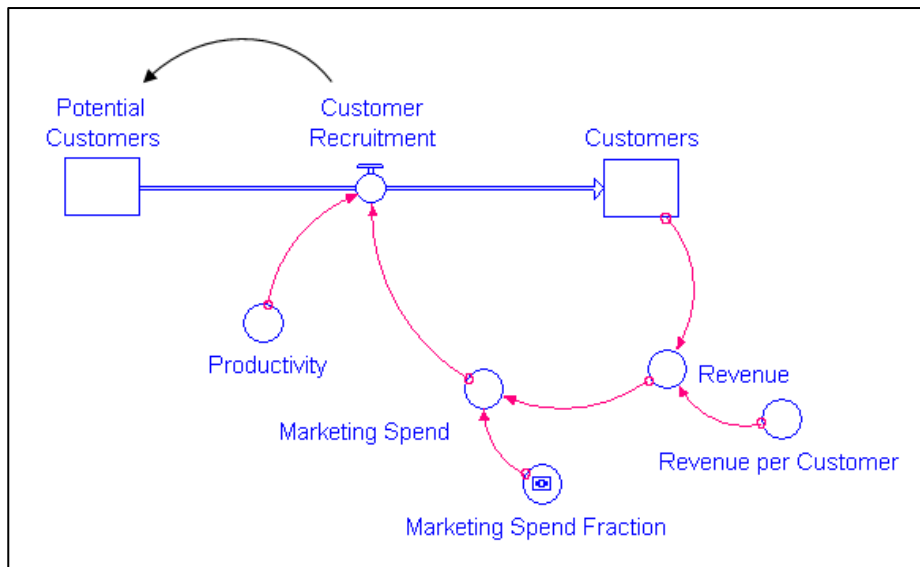
INFLOWS:

$Customer_Recruitment = Marketing_Spend * Productivity$
 $Marketing_Spend = Revenue * Marketing_Spend_Fraction$
 $Marketing_Spend_Fraction = 0.08$
 $Productivity = 0.05$
 $Revenue = Customers * Revenue_per_Customer$
 $Revenue_per_Customer = 50$



Customer Model 2

(Reinforcing Loop with Balancing Loop)

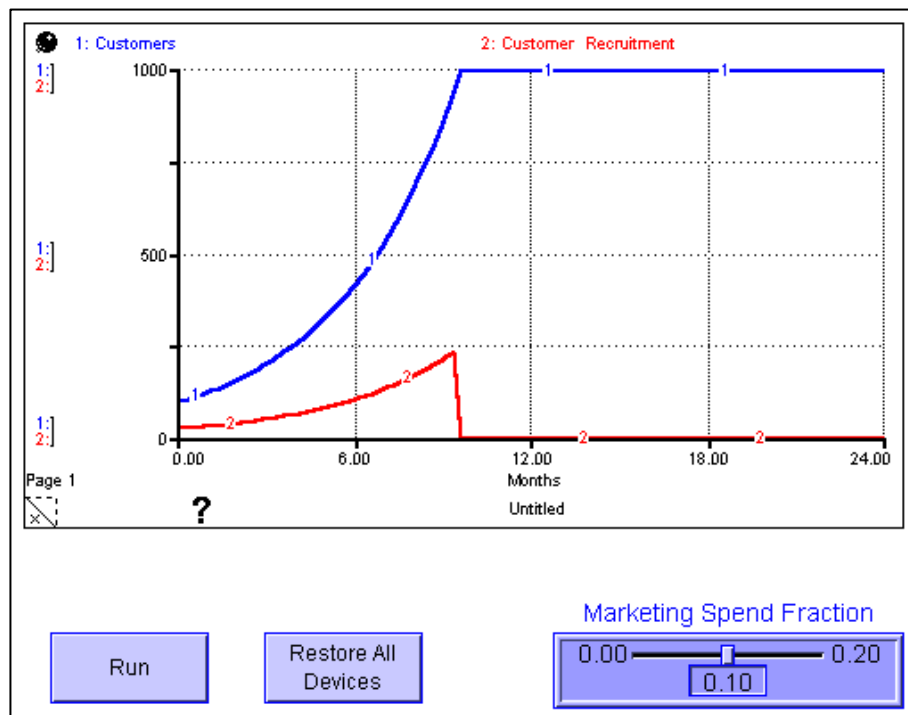


Customers(t) = Customers(t - dt) + (Customer__Recruitment) * dt
 INIT Customers = 100

INFLOWS:
 Customer__Recruitment = Marketing_Spend*Productivity

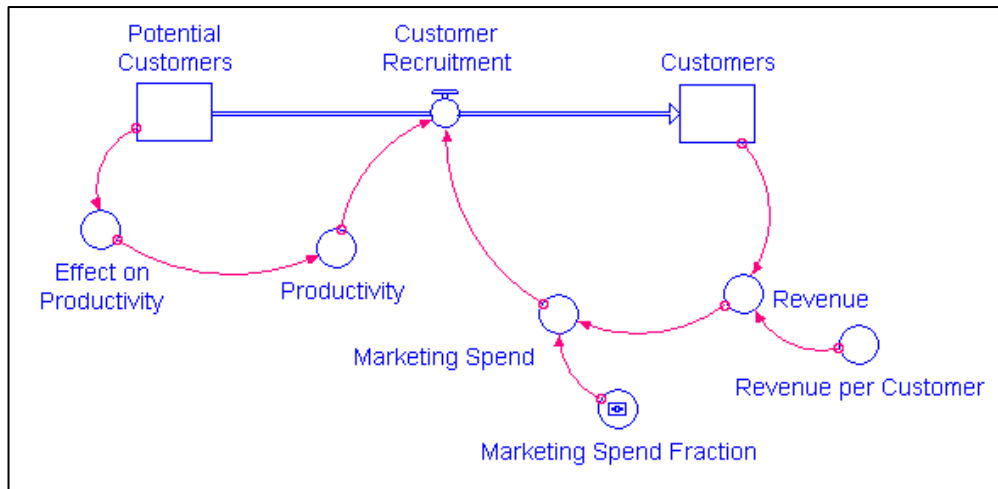
Potential__Customers(t) = Potential__Customers(t - dt) + (- Customer__Recruitment) * dt
 INIT Potential__Customers = 900

OUTFLOWS:
 Customer__Recruitment = Marketing_Spend*Productivity
 Marketing_Spend = Revenue*Marketing_Spend_Fraction
 Marketing_Spend_Fraction = 0.08
 Productivity = 0.05
 Revenue = Customers*Revenue_per_Customer
 Revenue_per_Customer = 50



Customer Model 3

(Introducing a Market Saturation Effect)



Customers(t) = Customers(t - dt) + (Customer__Recruitment) * dt

INIT Customers = 100

INFLOWS:

Customer__Recruitment = Marketing_Spend*Productivity

Potential__Customers(t) = Potential__Customers(t - dt) + (- Customer__Recruitment) * dt

INIT Potential__Customers = 900

OUTFLOWS:

Customer__Recruitment = Marketing_Spend*Productivity

Effect_on__Productivity = Potential__Customers/INIT(Potential__Customers)

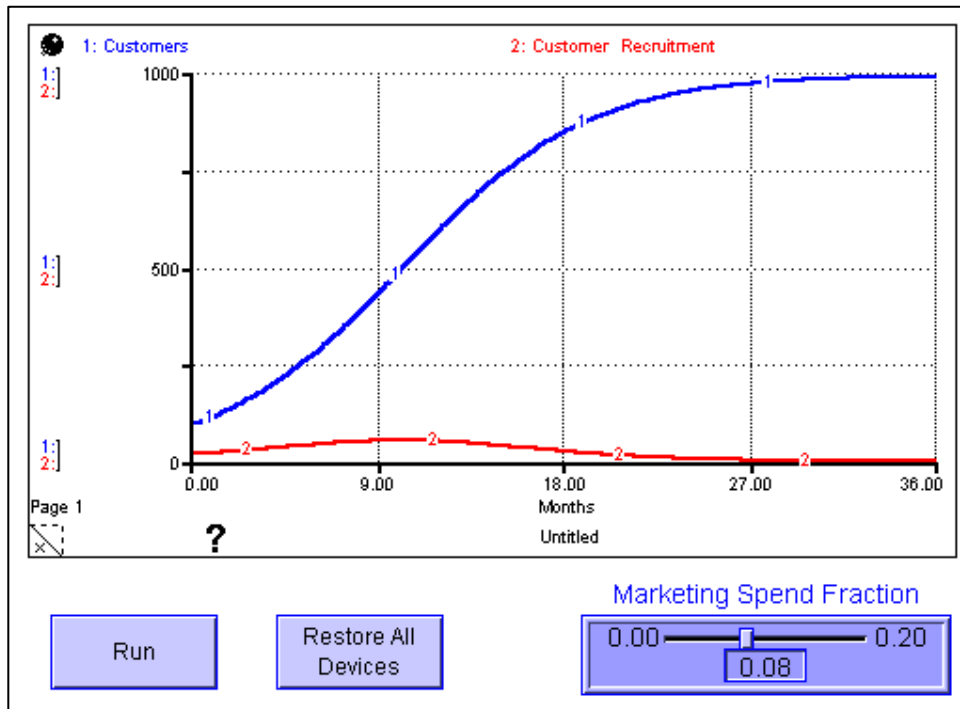
Marketing_Spend = Revenue*Marketing_Spend_Fraction

Marketing_Spend_Fraction = 0.08

Productivity = 0.05*Effect_on__Productivity

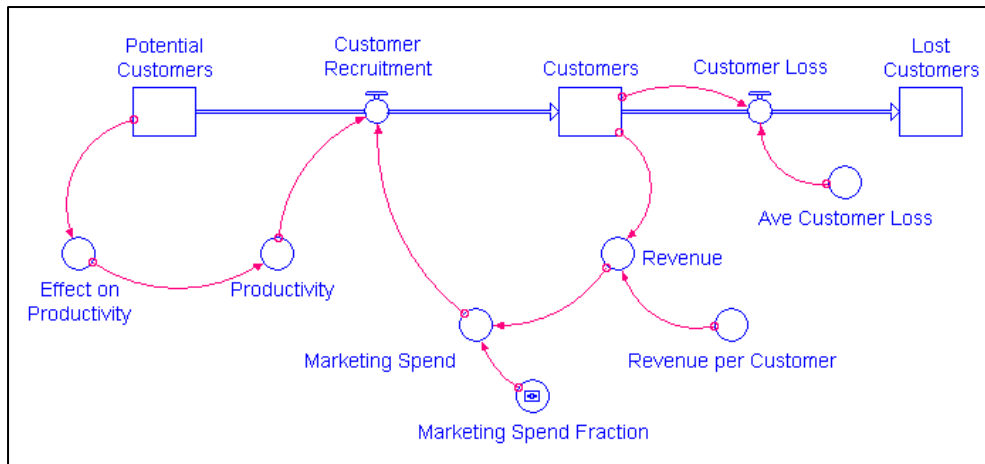
Revenue = Customers*Revenue_per_Customer

Revenue_per_Customer = 50



Customer Model 4

(Introducing another loop - Customer Loss)



$$\text{Customers}(t) = \text{Customers}(t - dt) + (\text{Customer_Recruitment} - \text{Customer_Loss}) * dt$$

INIT Customers = 100

INFLOWS:

$$\text{Customer_Recruitment} = \text{Marketing_Spend} * \text{Productivity}$$

OUTFLOWS:

$$\text{Customer_Loss} = \text{Customers} * \text{Ave_Customer_Loss}$$

$$\text{Lost_Customers}(t) = \text{Lost_Customers}(t - dt) + (\text{Customer_Loss}) * dt$$

INIT Lost__Customers = 0

INFLOWS:

$$\text{Customer_Loss} = \text{Customers} * \text{Ave_Customer_Loss}$$

$$\text{Potential_Customers}(t) = \text{Potential_Customers}(t - dt) + (- \text{Customer_Recruitment}) * dt$$

INIT Potential__Customers = 900

OUTFLOWS:

$$\text{Customer_Recruitment} = \text{Marketing_Spend} * \text{Productivity}$$

$$\text{Ave_Customer_Loss} = 0.05$$

$$\text{Effect_on_Productivity} = \text{Potential_Customers} / \text{INIT}(\text{Potential_Customers})$$

$$\text{Marketing_Spend} = \text{Revenue} * \text{Marketing_Spend_Fraction}$$

$$\text{Marketing_Spend_Fraction} = 0.08$$

$$\text{Productivity} = 0.05 * \text{Effect_on_Productivity}$$

$$\text{Revenue} = \text{Customers} * \text{Revenue_per_Customer}$$

$$\text{Revenue_per_Customer} = 50$$

