



INNOVATIONS IN PACKAGING AUTOMATION

MULCH & SOIL COUNCIL 2019

Ed Pickens, Director of Product Management & Engineering



Bulk Materials



**Dosing/
Filling**



Form Fill Seal



Bag Handling



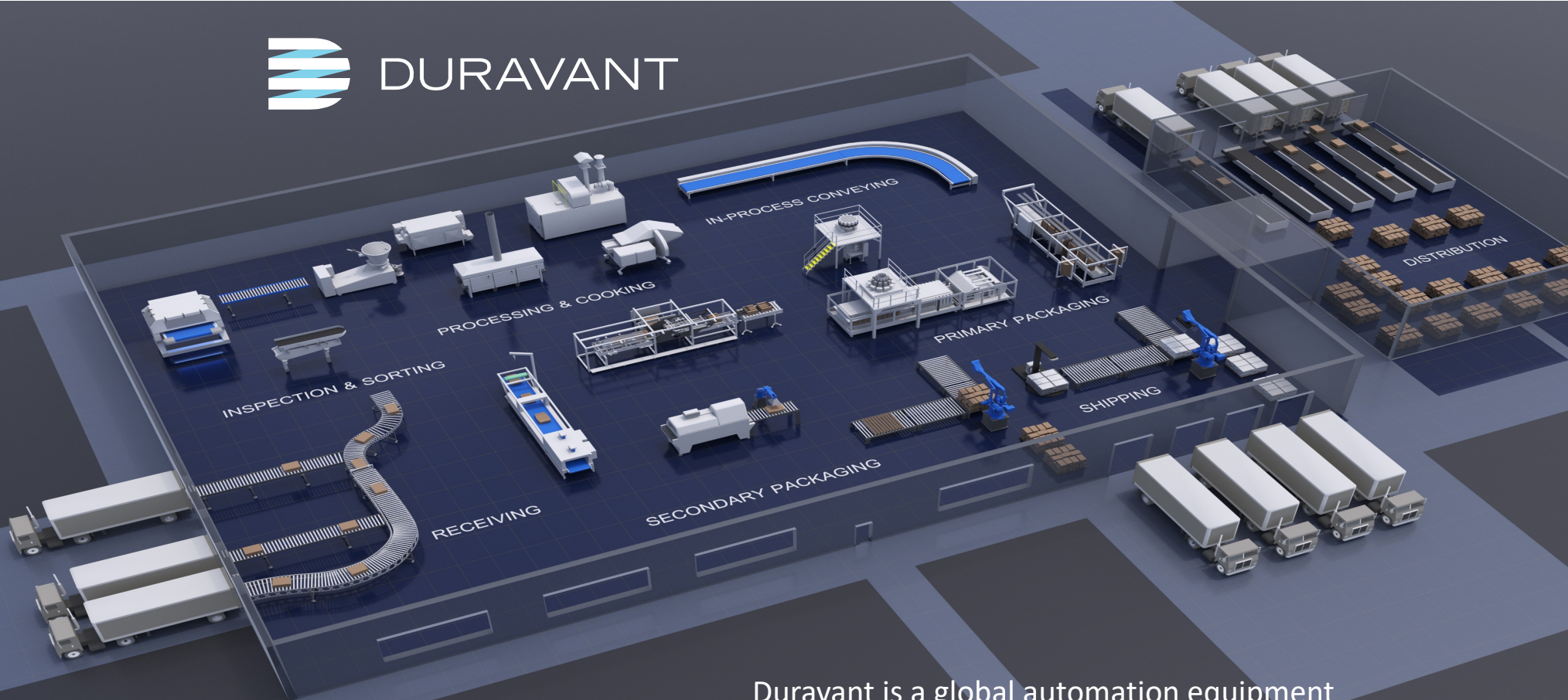
Palletizing



Load Securing

100+ years packaging automation

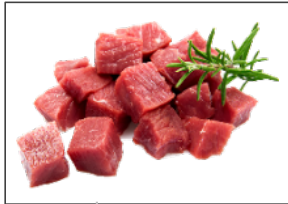
25 Years in Mulch and Soil packaging automation



Duravant is a global automation equipment company with a premium portfolio of products, services and integrated solutions.

Duravant Sectors

FOOD PROCESSING



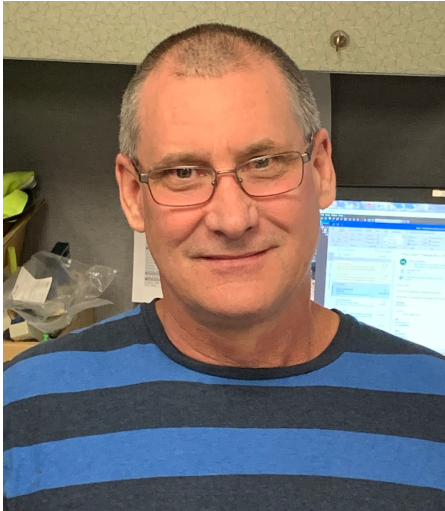
PACKAGING EQUIPMENT



MATERIAL HANDLING



Our Lawn & Garden Credibility



Randy
25 Years

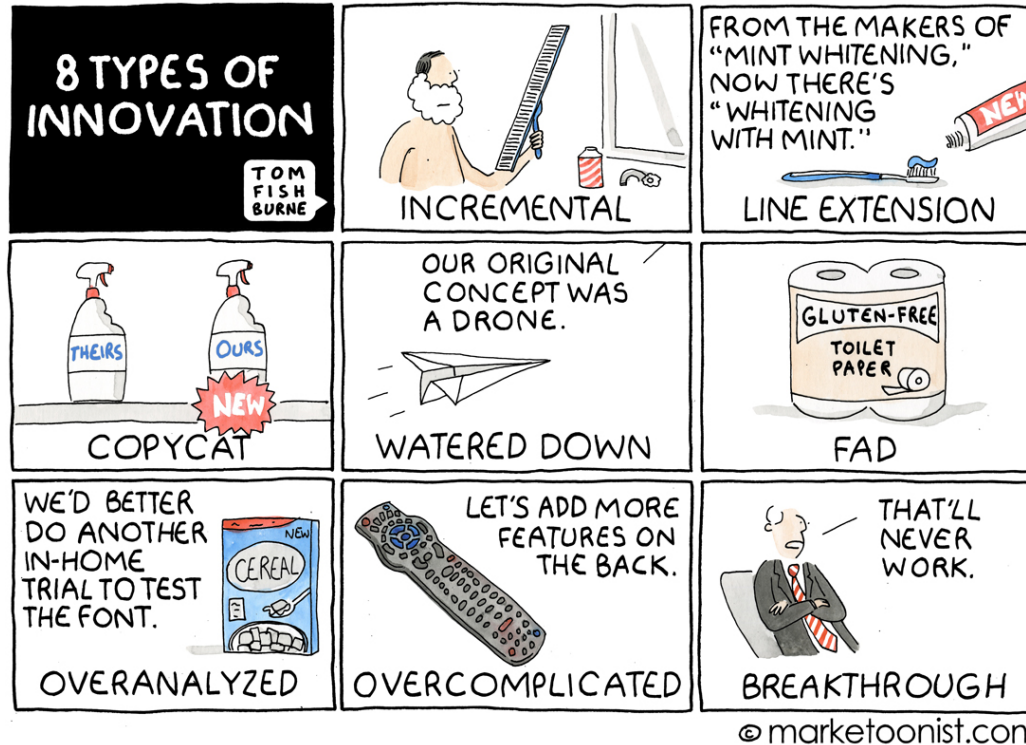


Jim
10 Years



Margaret
10 Years

What is innovation: Something “New”



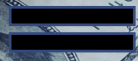
New isn't necessarily better.



The goal of automation: Productivity



OUTPUT

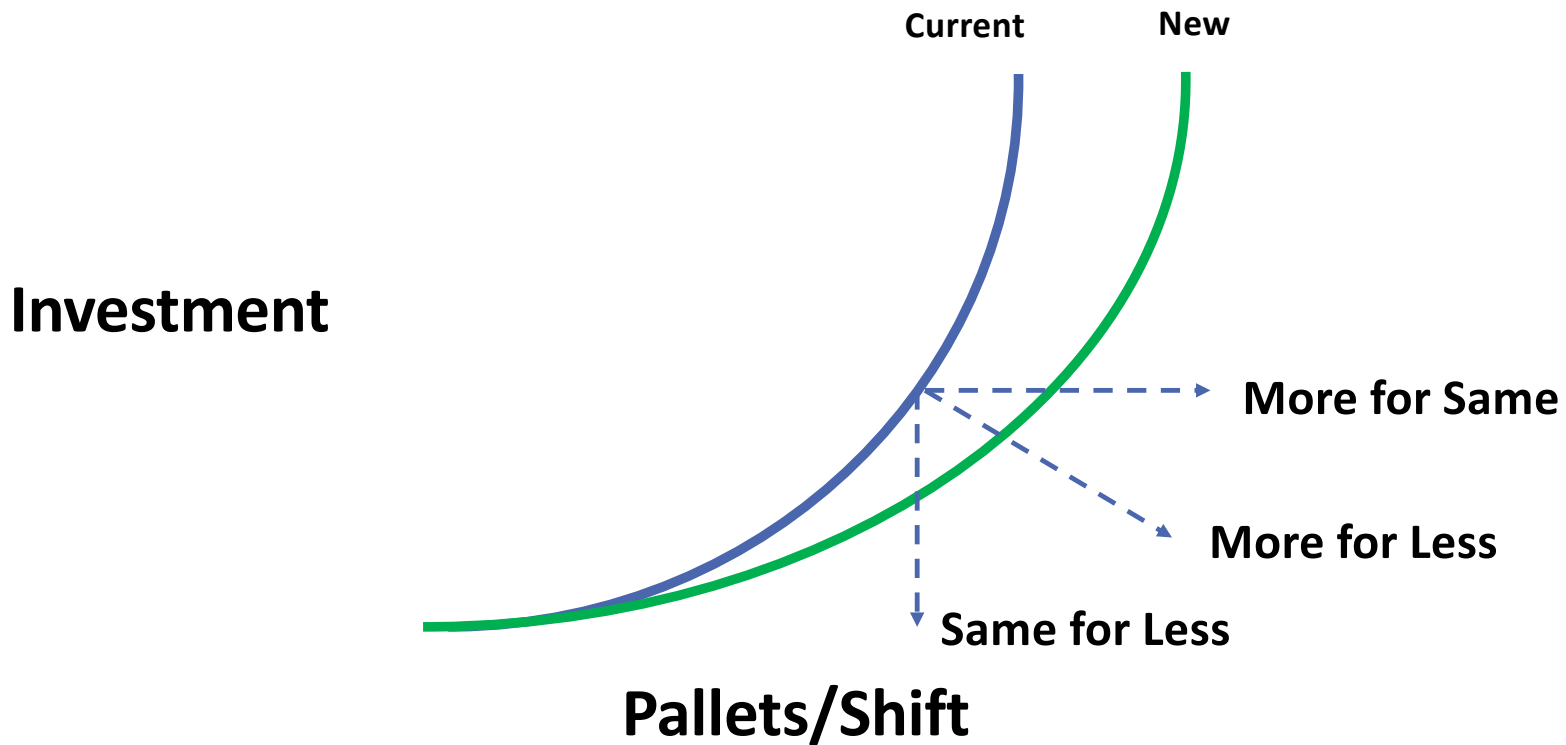


PRODUCTIVITY



INPUT

Real Innovation: Bending the Curve



Ways to bend the curve

- Lower Equipment Cost
 - Increase Speed
-

Squeezing the balloon challenge



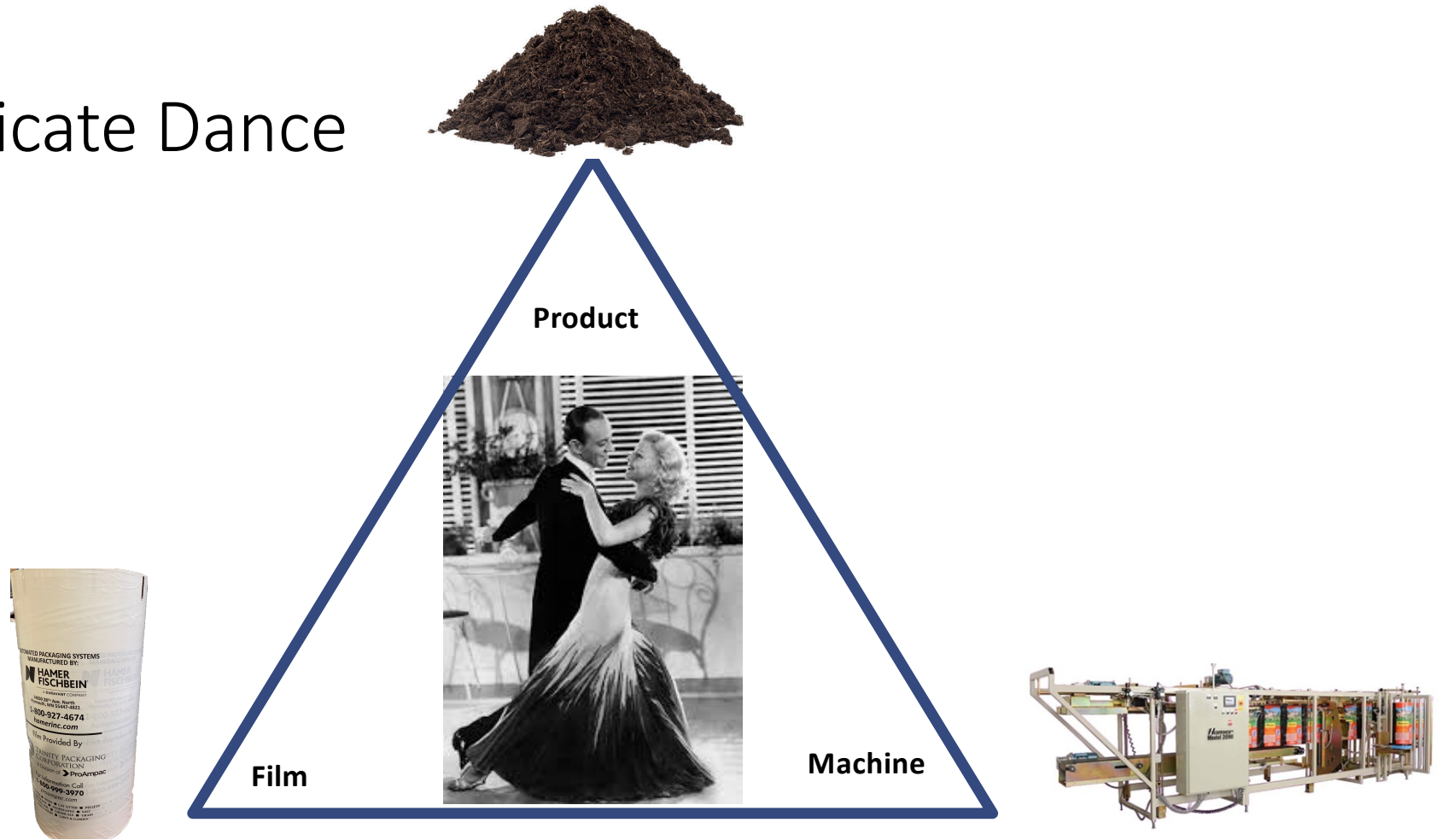
Limits to Bending the Curve: Product



- Mulch & Soil are not uniform
 - Temperature, moisture, & size all vary

Speed Requires Precision

Limits: The Delicate Dance



Limits: Maintenance



- **The cost of downtime**
 - **Wasted product**
 - **Unproductive labor**
 - **Unplanned/premature repairs**

- **The critical 3:**
 - **Air**
 - **Belts**
 - **Clean**

Advancements in Technology

- Pneumatics vs Electrics
- Bag Film
- Roll Management
- Package Design
- Wrap Technology
- Process Information



Pneumatics



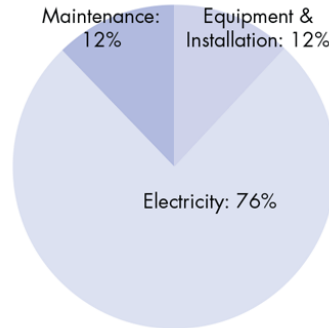
- Size
- Cost
- Power Density
- Hazardous Duty

vs.

Electrics



- Operating Cost
- Maintenance
- Durability
- Precision



Good Air Isn't Cheap!
\$.30-\$.50/1000 cf



Film Technology - Polymers

- New Polymers = New Possibilities
 - Thinner Films
 - More Bags/roll
 - Lower Cost/bag
 - Trade-Off
 - Less margin for error
 - 20 minutes down time > \$.01/bag savings
 - Multilayer Technologies
 - Allows for much more sophisticated branding



Film Technology - Green

Possible

- Recyclable
- Bio-stock



Less Possible

- Post consumer content – not consistent
- Compostable – UV exposure

Roll Management: Horizontal vs. Vertical



- Horizontal vs. Vertical
 - 1 roll/shift vs. up to 4
 - Pays off in <2 months if you have long runs





Product Information/Printing

Print up to 8.5" x 11" area

- Limit Film changes
- Change how you bag

Wrapping

- Stretching the Pre-Stretch
 - Film quality vs. film quantity
- Labeling – Customer documentation
- Roping – Heavy load securing
- System Diagnostics
 - Predictive capabilities
 - System monitoring



Process Information – System Performance vs. Machine Performance



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Cost of Data



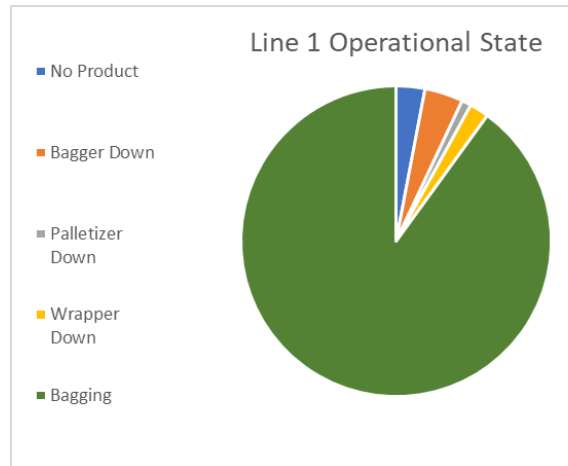
Value of Information





Remote Monitoring

- System Status
- System Trends
- Maintenance Alerts
- System documentation
- Remote Service



HAMER FISCHBEIN
A DURAVANT COMPANY

Equipment List **My Systems** Notification Center Reports My Sellings Logout

Systems **2090 Form Fill Seal** Ameri

2090 Form Fill Seal
2090 Form Fill Seal

IoT Connection Status
Latest: **Connected**
at 10:19:05 am on 09-19-2019

Unit Mode
Latest: **Auto Mode**
at 10:13:45 am on 09-19-2019

Fault Status
Latest: **Clear**
at 10:13:45 am on 09-19-2019

Bags Per Minute
Latest: **1**
at 10:13:45 am on 09-19-2019

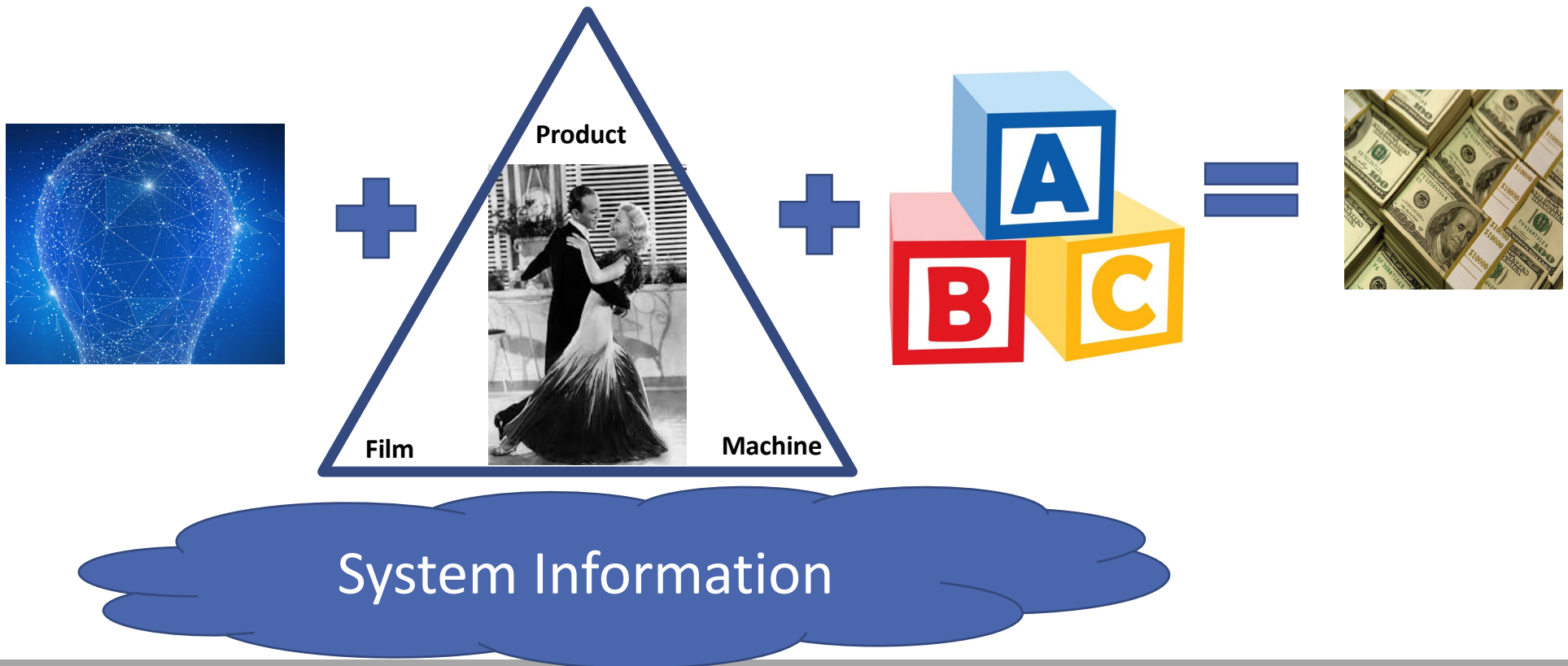
Bags Today
Latest: **122622**
at 10:14:09 am on 09-19-2019

Analysis

Service Request

Documentation

Conclusion



Tortoise and the Hare

