## SmartFlow drives process specific solutions through disciplined analytical methods applied both internally and in partnership with our customers



Introduction

· Separate and recover

valuable components

**Proof of** 

Concept

2 to 7 days

- · 2 Central labs
- Product recovery M<sub>w</sub> fractionation Concentrate to high
- Water recovery
- · Product clarification
- · Trash to Treasure

solids

- Byproduct recovery
- BOD/COD reduction
- Replace / supplement centrifuges & evaporators
  - · Energy savings
  - Free up capacity
- Improved product quality



- Discuss objectives
- Prioritize opportunities Joint go/no-go decision

- Sample evaluation
- Preliminary feasibility testing
- Results analysis
  - Physical samples
  - · Summary of results
  - · SmartFlow go/nogo



- **Budgetary** proposal for process development
- Budgetary estimate for full scale project



Customer go/no go for detailed process development investment

· Membrane evaluations and selection

**Process** 

**Development/** 

**Optimization** 

7 to 28 days

- System size / process time matrix evaluation
- · Process Conditions Optimization
- · Flux decay curve
- Shear & TMP curves
- Temperature curve
- pH curve
- · Cleaning optimization



- Level 1 Economic Analysis
- · Process selection



Detailed quotes evaluate trial or plant scale

- Rental / Pilot **System Evaluation** 
  - 30 to 180 days
- System sizing
- · URS and Module configuration
- · At Customer's Site
- S.A.T. & Turnover
- Service program evaluation
- · On-site performance optimization



 Confirm **Economics** 

- **Deployment**

**Initial Plant** 

Multi-Plant **Roll Out** 

## 365 Active Management Solution (365 AMS Program)

- · Scaled up system sizing
- · URS and Module configuration
- Production: Approval Drawings through **FAT**
- S.A.T., Turnover, & Commissioning
- Service program evaluation
- Performance optimization



- Confirm **Economics**
- 365 AMS program choice
  - · Modules, service & maintenance

- Plant to Plant variability analysis
  - Equipment
- Raw materials
- Process additives
- Equipment environment
- Available energy
- Incorporate plant specific adiustments
- Plant deployment schedule and implementation



- 365 AMS program choice
  - · Modules, service & maintenance



