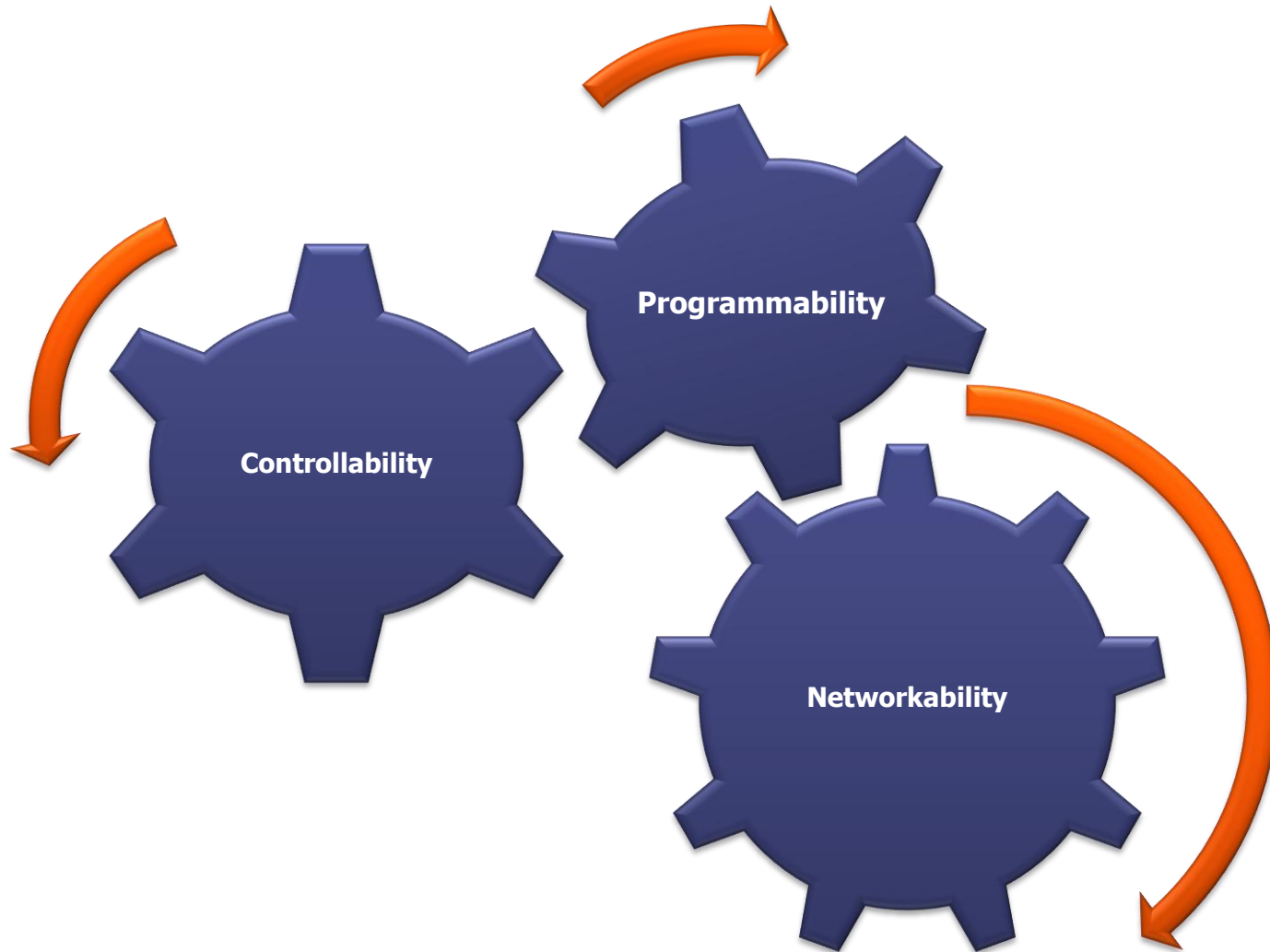


Potential Recaptured

Using Power of Existing BMS
Technology in DSR

John Arfman





- Most systems use extensive and underutilized network infrastructures using any protocol:
 - Proprietary
 - JCI-N1 or N2 / Siemens-P1 or P2 / Honeywell-C or E bus
 - Andover-C or L bus / AAMatrix-PHP or PUP / Etc.
 - Open
 - Echelon – LonWorks
 - ASHRAE – BACnet

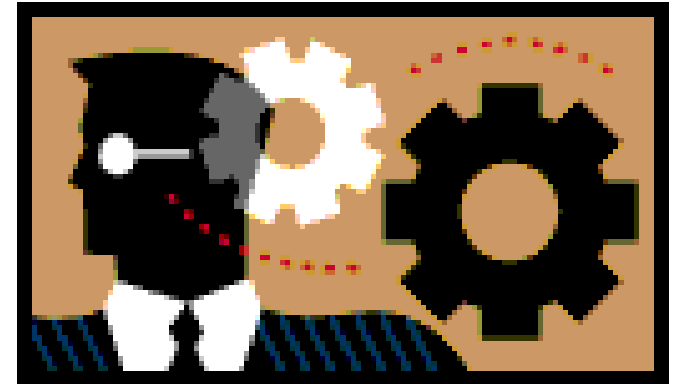


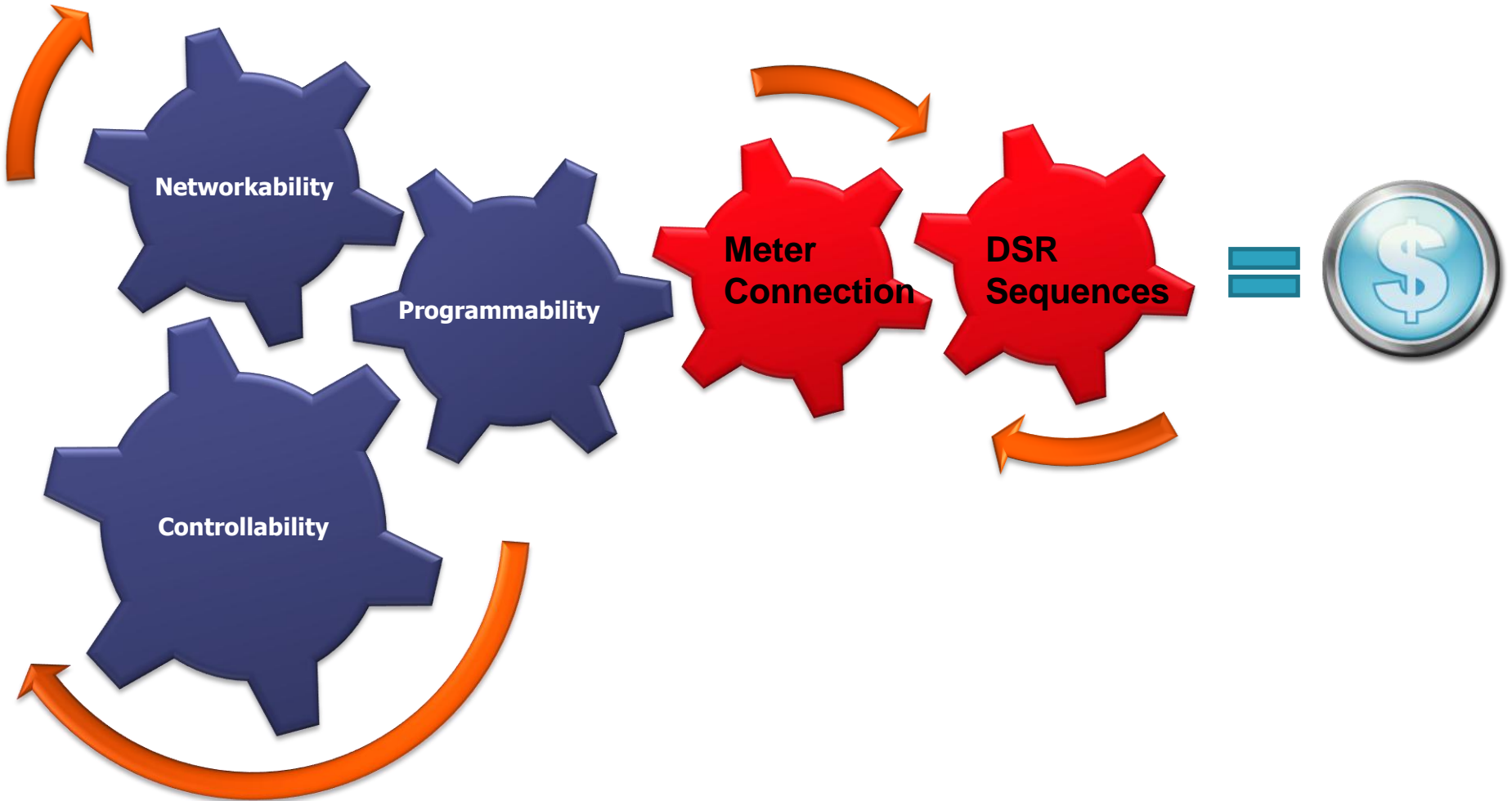
- Most BMS have basic control of major systems and loads in buildings best suited for DSR:
 - Central Plant Equipment
 - Electric Chillers / Cooling Towers
 - Cooling and Heating System Pumps
 - Distributed System Equipment:
 - Air Handlers
 - Terminal Level Equipment
 - Fan Coil Units
 - VAV and Fan Powered Boxes

- Most Systems provide programmable environment for custom applications:
 - Field Controller Level
 - Front End / Graphical User Interface Level



- Physical
 - Meter Connectivity
- Program Development
 - DSR Sequences
 - Investigation
 - Assessment
 - Modeling
 - Application Development
 - Deployment and Testing





- Owners / Operators
 - Reflection
 - Contact BMS Vendor
 - Investigate DSR Programs
 - Sell Program to Management
- BMS Contractors:
 - Reflection
 - Float a Couple of Ballons
 - Meet and Evaluate DSR Players
 - Develop Offering