Pursuing the Art of the Possible: Transforming Maintenance and Administrative Processes

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ACCOUNTABILITY
STRENGTH
LEADERSHIP
CULTURE OF SUCCESS
ROAD TO...
ART OF THE POSSIBLE
GOALS
GAME PLAN EXECUTION
CONSTRAINT MANAGEMENT
CORE VALUES
VISION
USAF
CREDIBILITY
STRATEGIC
MISSION
COMMITMENT
SUCCESS
AFSC WAY
TEAMWORK
PROBLEM-SOLVING
INCREASED EFFICIENCY

AoP Success Stories

- **MRO**
  - **WIP reduced 45% (127 to 70) in 8 months**
    - **$4B of assets returned to service**
  - **Creating capacity for a 65% increase in workload**
    - **$400M of facility construction avoided**
- **Safety Office Investigations**
  - **WIP reduced 75% (47 to 11)**
  - **Flow days reduced 63% (30 days to 11 days)**
  - **Redistributed workload, created flow**
- **Training Office SOJT/SSQ Triennial Review**
  - **Flow days reduced 69% (96 days to 30 days)**

WHAT IS AOP?
Definition

- **<u>Constraints-based</u> management system for all business operations**
- **Framework for how the AFSC conducts business and how we strive to achieve world class results in warfighter support**
  - **Not what we do, but ***<u>how</u>* **we do it**

THE SCIENCE OF THROUGHPUT

The Machine



Requirements


Speed ↑ Quality ↑ = Readiness

WIP
(Down=Good)

Asset Availability
(Up=Good)

PEOPLE

PROCESSES

RESOURCES

Those Doing The Work

The Way We Work

The Stuff Needed To Do The Work

Compliance

Safety

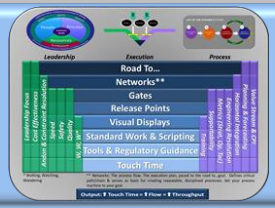


Combat Capability


CORE TENETS

- The Leadership Model

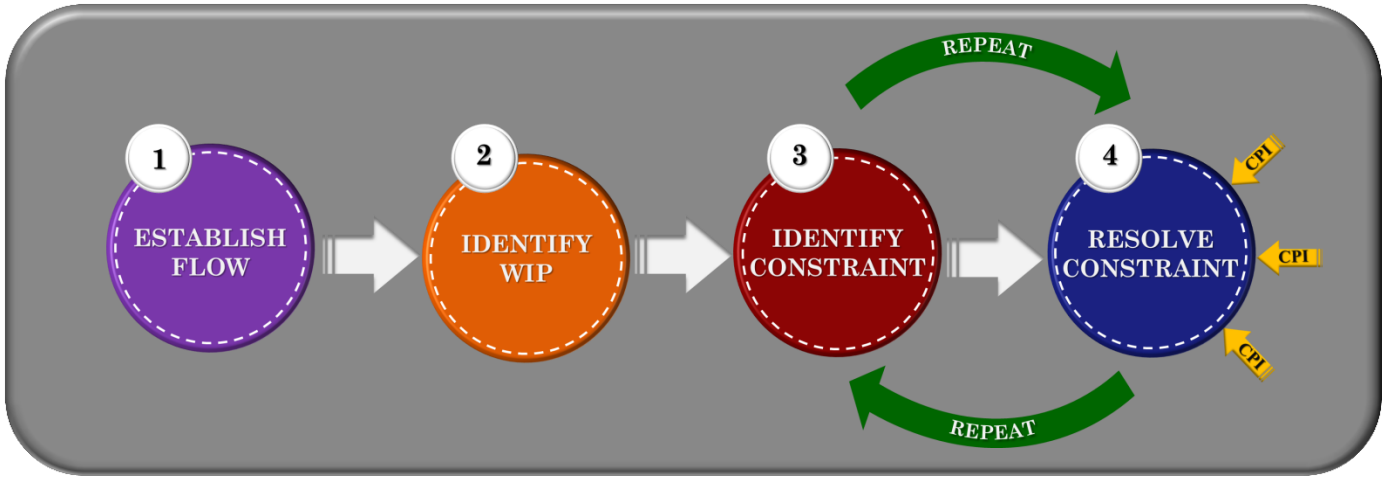
- The Radiator Chart



- Flow Establishment
- WIP Identification
- Constraint Identification
- Constraint Resolution

THE AoP CYCLE

The Method



- **The AoP management system cycle is comprised of four basic steps:**
  1. **Once a task is selected, establish flow** – movement of work through the process machine
  2. **Identify and limit WIP** – what and where your work is in the process
  3. **Identify Constraint** – what's preventing output of the entire process, directly impacting the critical path
  4. **Resolve Constraint** by applying CPI tools and techniques
- **Continue to identify and resolve constraints impacting the critical path**

ART OF THE POSSIBLE POST

CREATING AN ORGANIZATION WITHOUT LIMITS

EXTRA! EXTRA! EXTRA!

ROAD TO…GOALS SURPASSED!!!

- C17 PDM JON Closeout team cuts flow days 50% - an average 4 days below requirement
- Produced 100 more aircraft in FY15 than in FY12

CUSTOMER SATISFACTION SOARS!!

- WR-ALC Safety Office drops mishap investigation flow days by 46% & WIP plummets by 67%
- Implementation of a Gated Test Program Set (TPS) maintenance process resulted in increased efficiency, yielding cost savings of $2.4M in FY15
- Improved flow days on A-10, KC-135, B-1, C-130, F-15, F-22, F-35, C-5, C-17, & F-15
- Critical parts shortages reduced by 25%
- Over 2.1 **BILLION** saved since FY13
- 20% energy reduction at depots from FY13 to FY15

What's different in Admin areas?

1. **Generally there is no defined flow**
   - Each person works items in their own way
   - Admin areas generally have little understanding for the need to have a specified flow
2. **WIP is not defined**
   - What is our product?
   - How much product do we have in our flow?
   - What is our capacity to produce products?
3. **Work is assigned in silos**
   - A person is assigned responsibility for an area, a product type, etc.

What's different in Admin areas? *(cont.)*

4. **There is no monitoring of how work enters the flow**
   - **Person assigned to the area/product accepts and starts any work needed**
   - **Leads to delays caused my multi-tasking**
5. **New work inputs constantly reshuffles priorities**
6. **Because there is no established flow nor WIP control, there is <u>no identification of the constraint</u>.**

Without flow, WIP identification, and WIP control there is no way to identify the constraint and effectively increase throughput.

So what do we do to resolve this?

1. **Establish flow**
   - There must be an agreed upon flow for the Admin area
2. **Define WIP and count how much WIP is in the flow system**
   - It will likely surprise you how much stuff your team is working on
3. **Pull all WIP from team/only assign a few tasks to each individual**
   - Don't assign more than 3-5 task to each person
   - Ask the individuals to focus all their efforts on finishing these few tasks (Focus and Finish)
   - As task completed, assign new task /do not exceed the 3-5

So what do we do to resolve this? *(cont.)*

4. **WIP that has not been assigned - put in queue**
   - **Helpful to have a skilled person triage (Full Kit) queued items so they are ready to work when assigned**
5. **Look to see how the queue grows or shrinks**
   - **Determines if output is exceeding the inputs or vice versa**

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AoP Success Stories

- **Procurement Contracts**
  - **WIP reduced 71% (351 requirements to 101 requirements)**
  - **Due date performance increased from ~21% to 78%**
  - **Standardized input requirements, setup gatekeeper, created flow**
- **Security Investigations**
  - **Flow days reduced 31% (102 days to 70 days)**
  - **Throughput and capacity increased 70% (500/yr greater than planned)**
  - **Ensured prompt employee notifications and converted some external operations to internal operations**

AoP Success Stories

- **Plant Services Projects**
  - **Divided into 4 groups by hours: Small, Medium, Large, and Extra Large**
  - **WIP reduced 79% (72 in execution to 15)**
  - **Critical Path management reduced execution gate time by 40%**