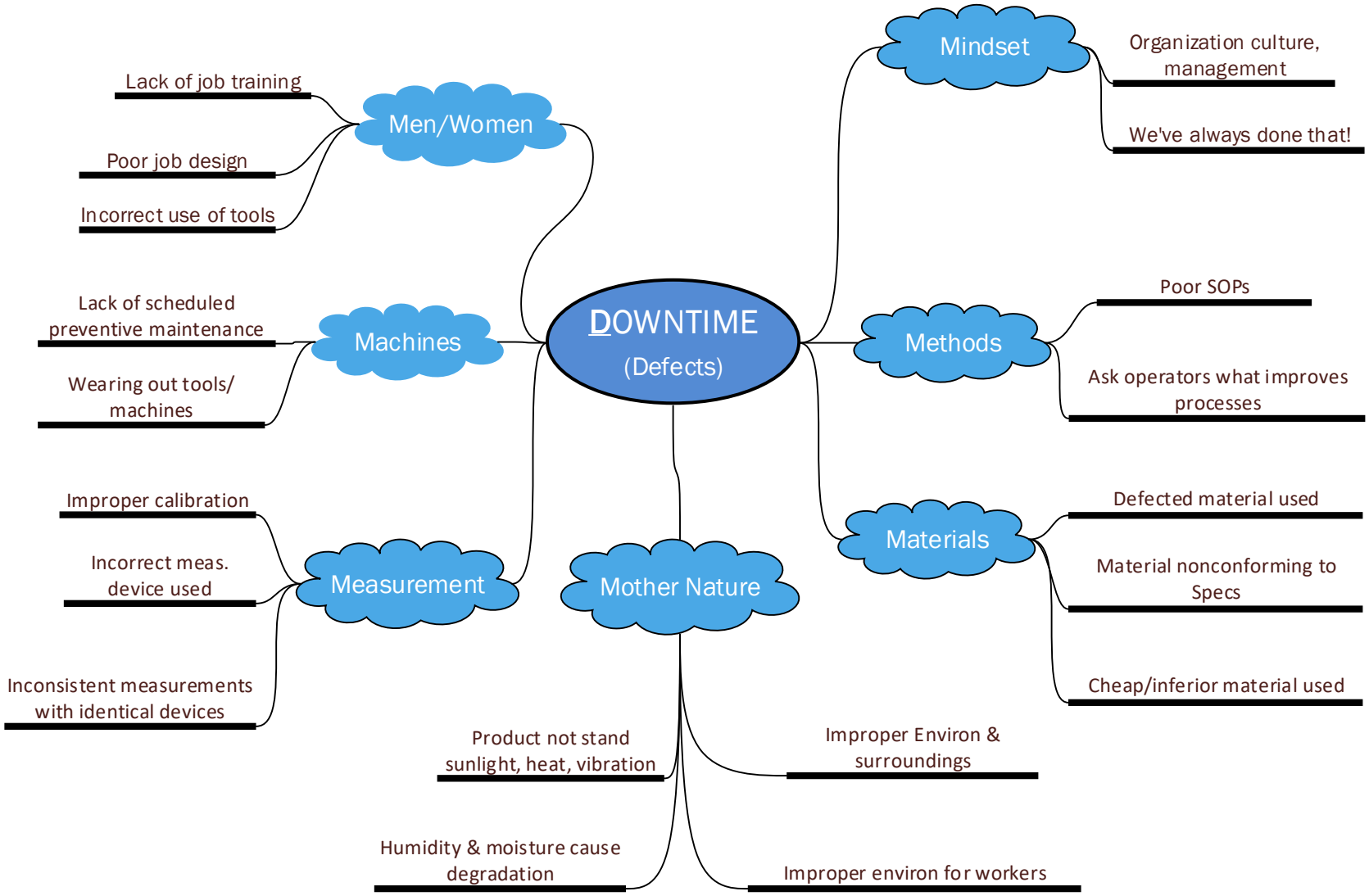
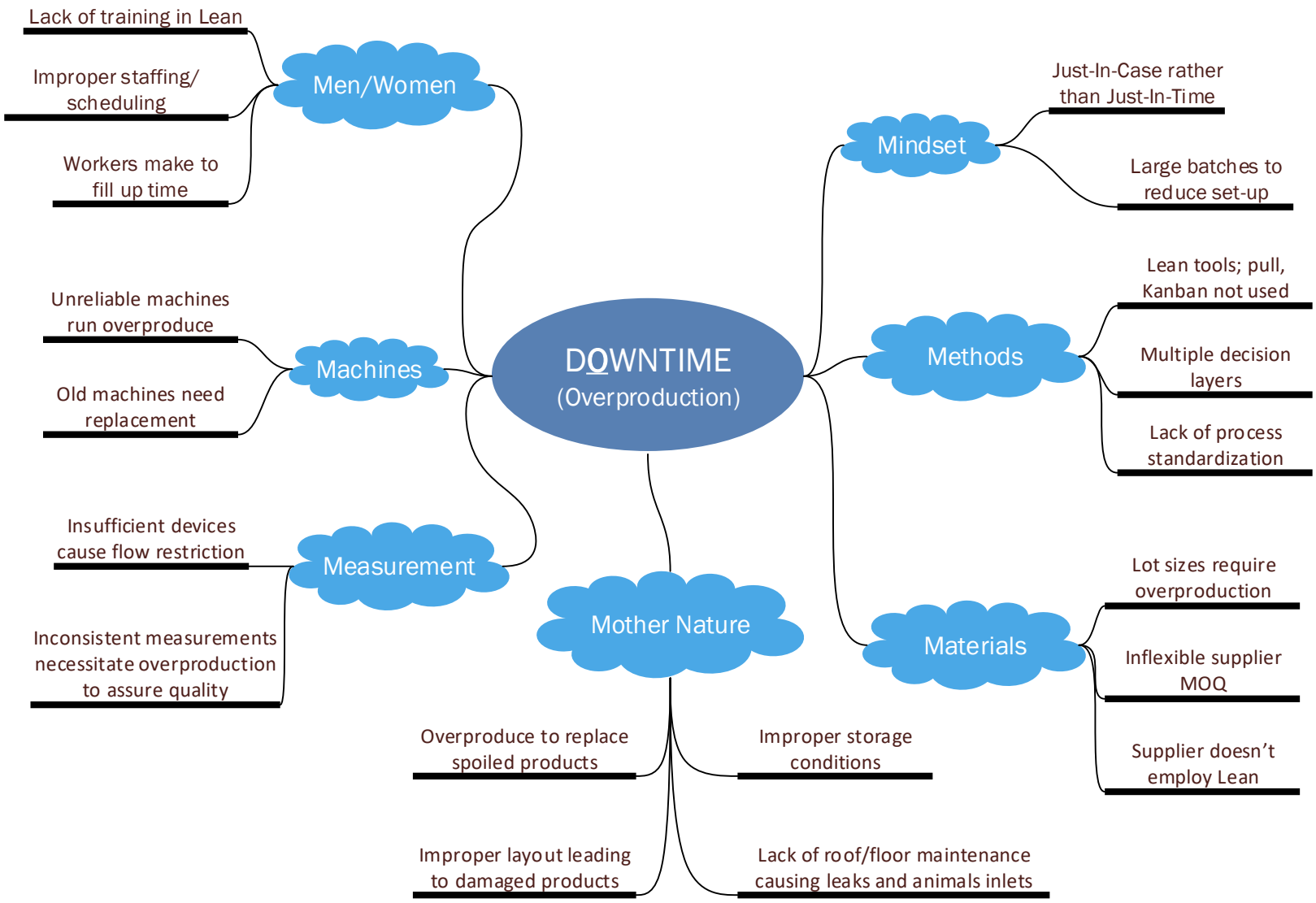
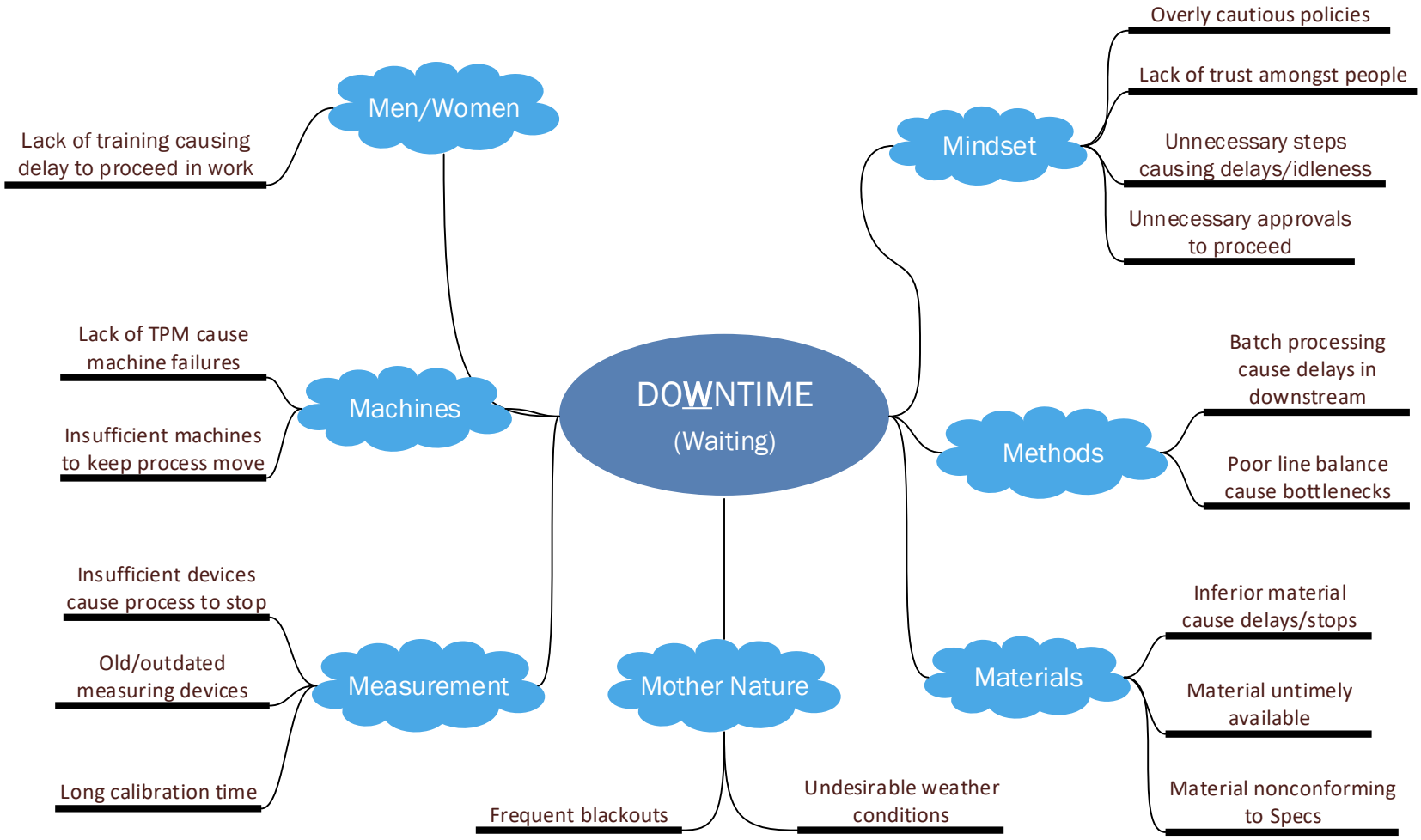
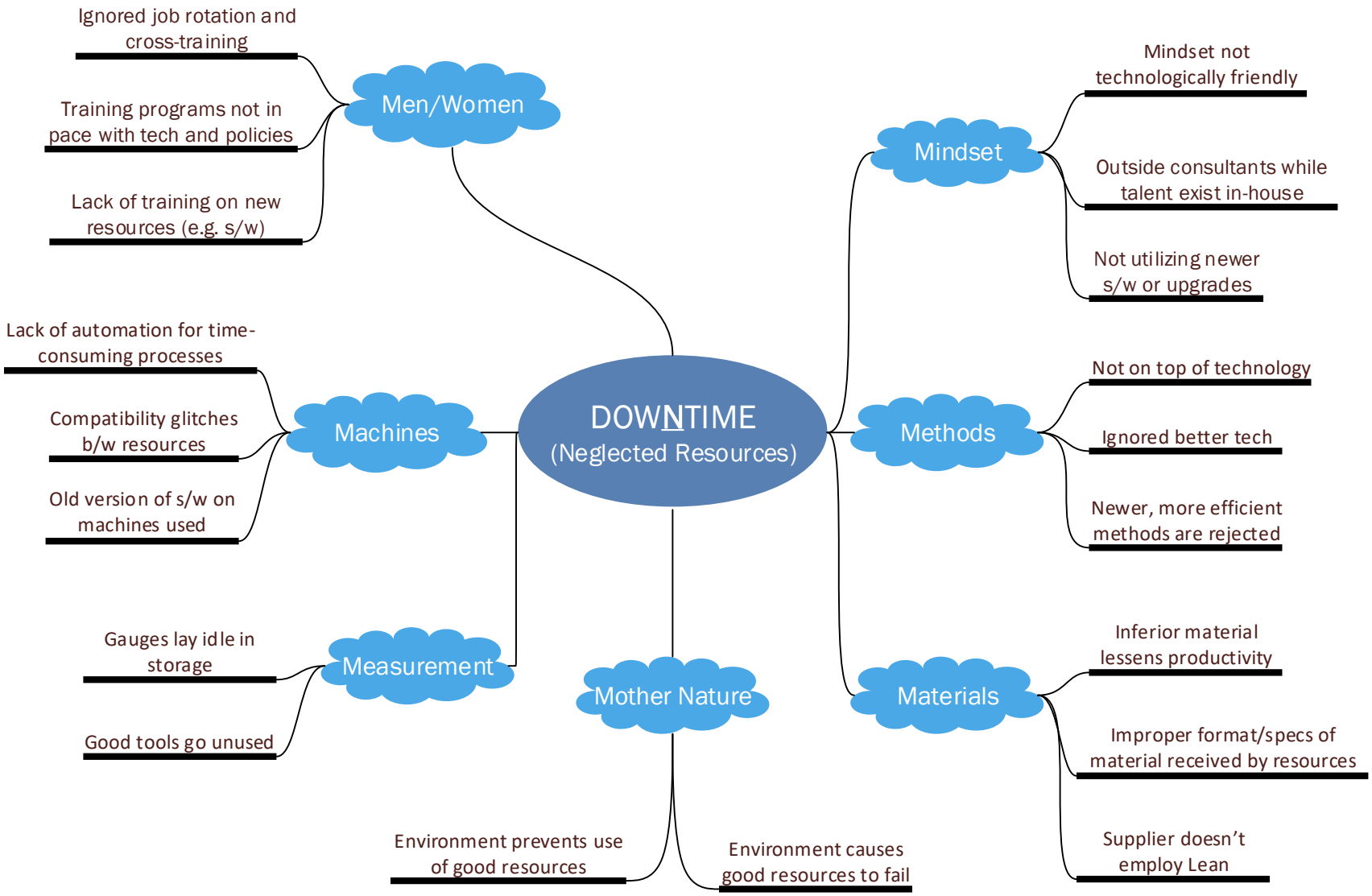
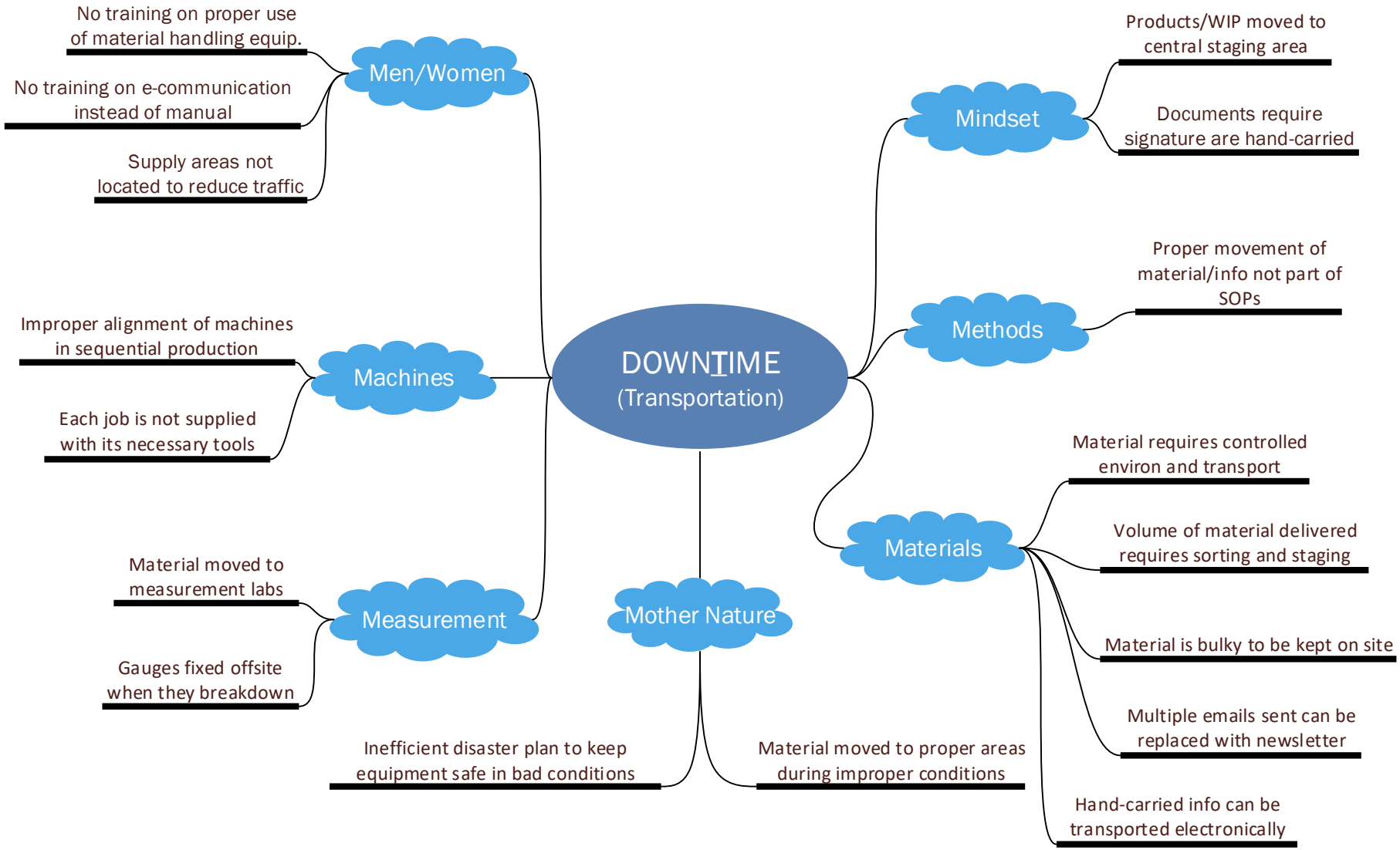
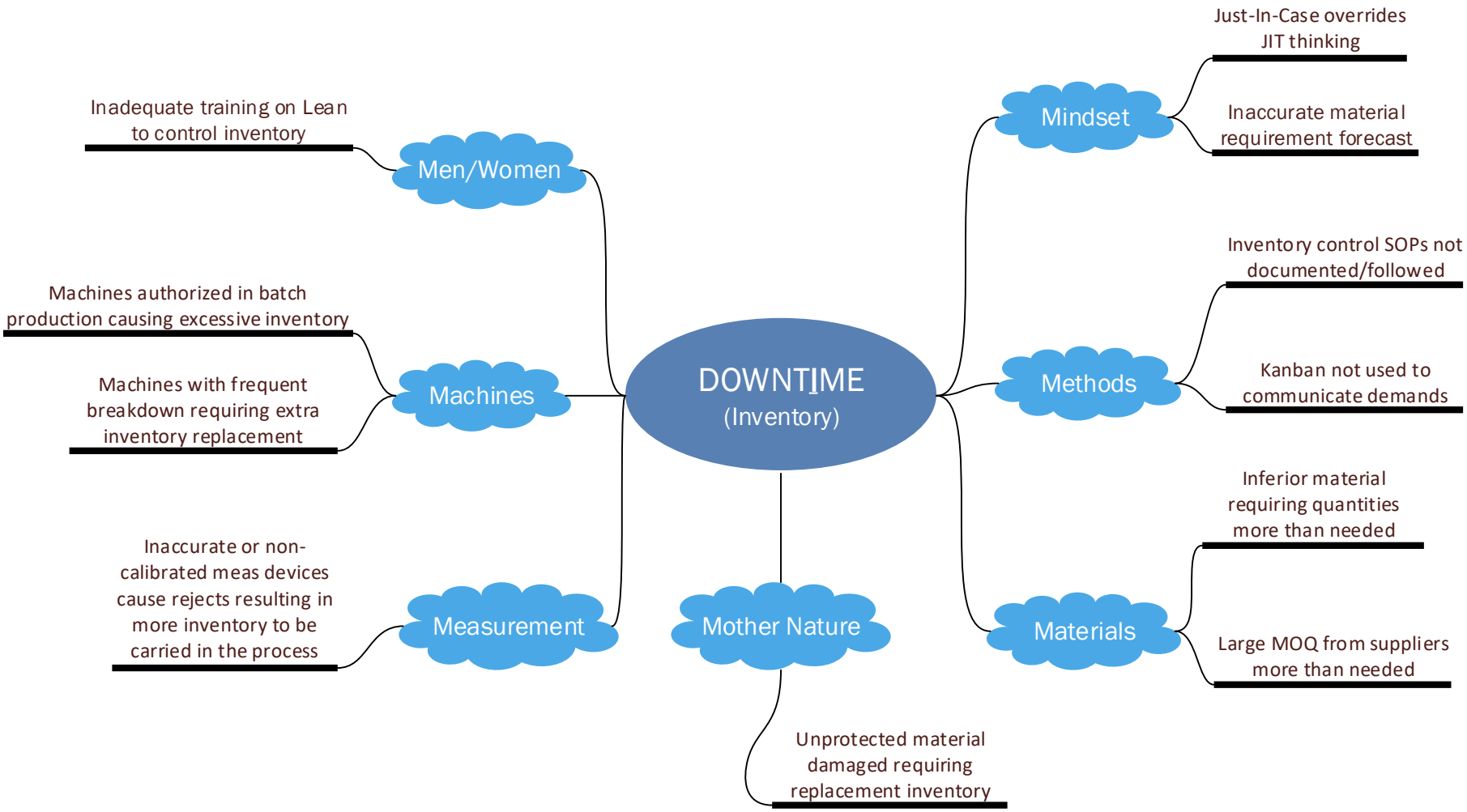

DOWNTIME
(Defects)
Men/Women
Lack of job training
Poor job design
Incorrect use of tools
Machines
Lack of scheduled preventive maintenance
Wearing out tools/ machines
Measurement
Improper calibration
Incorrect meas. device used
Inconsistent measurements with identical devices
Mindset
Organization culture, management
We've always done that!
Methods
Poor SOPs
Ask operators what improves processes
Materials
Defected material used
Material nonconforming to Specs
Cheap/inferior material used
Mother Nature
Product not stand sunlight, heat, vibration
Humidity & moisture cause degradation
Improper Environ & surroundings
Improper environ for workers

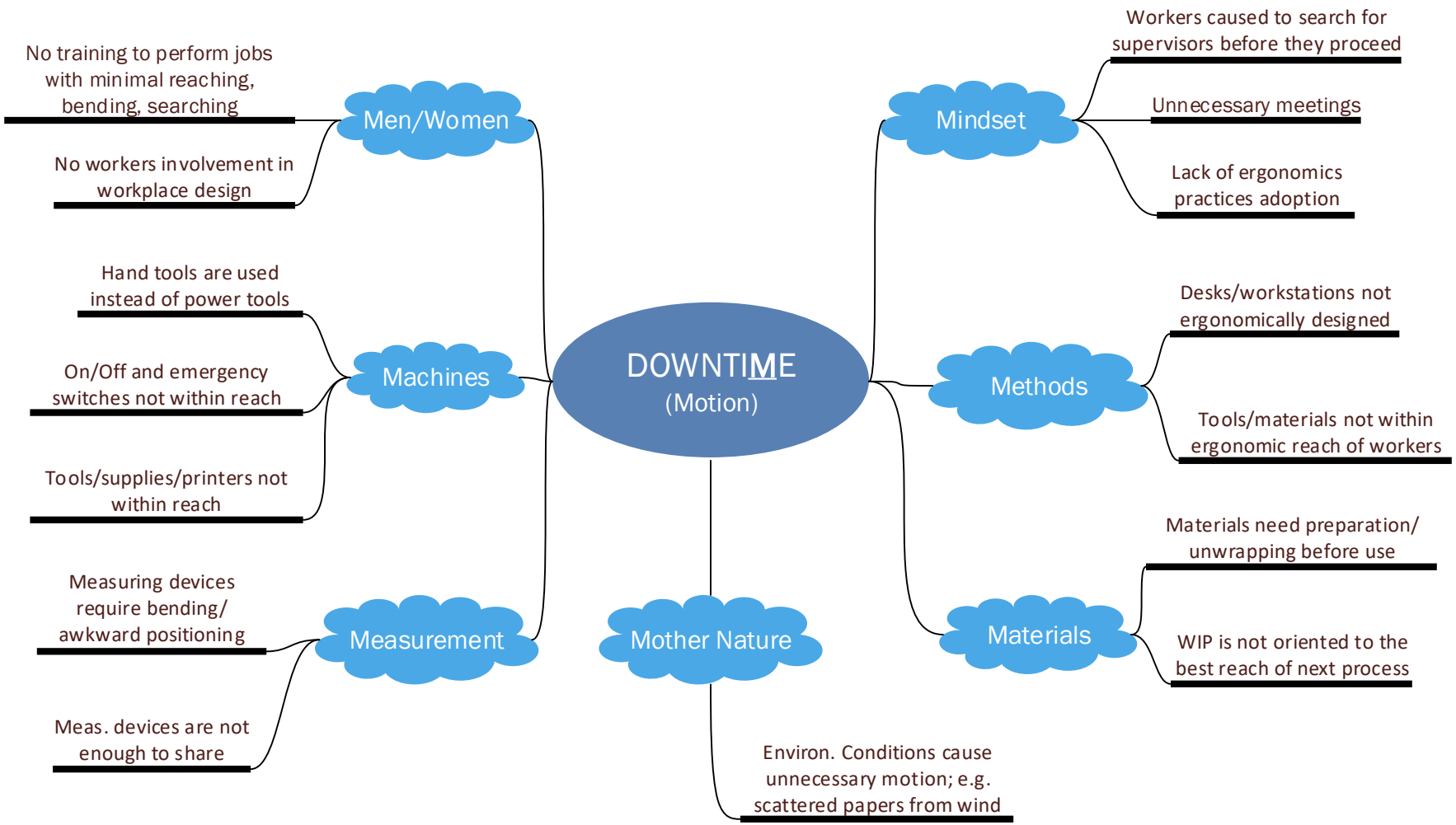

DOWNTIME
(Overproduction)
Men/Women
Lack of training in Lean
Improper staffing/ scheduling
Workers make to fill up time
Machines
Unreliable machines run overproduce
Old machines need replacement
Measurement
Insufficient devices cause flow restriction
Inconsistent measurements necessitate overproduction to assure quality
Mother Nature
Overproduce to replace spoiled products
Improper storage conditions
Improper layout leading to damaged products
Lack of roof/floor maintenance causing leaks and animals inlets
Mindset
Just-In-Case rather than Just-In-Time
Large batches to reduce set-up
Methods
Lean tools; pull, Kanban not used
Multiple decision layers
Lack of process standardization
Materials
Lot sizes require overproduction
Inflexible supplier MOQ
Supplier doesn't employ Lean

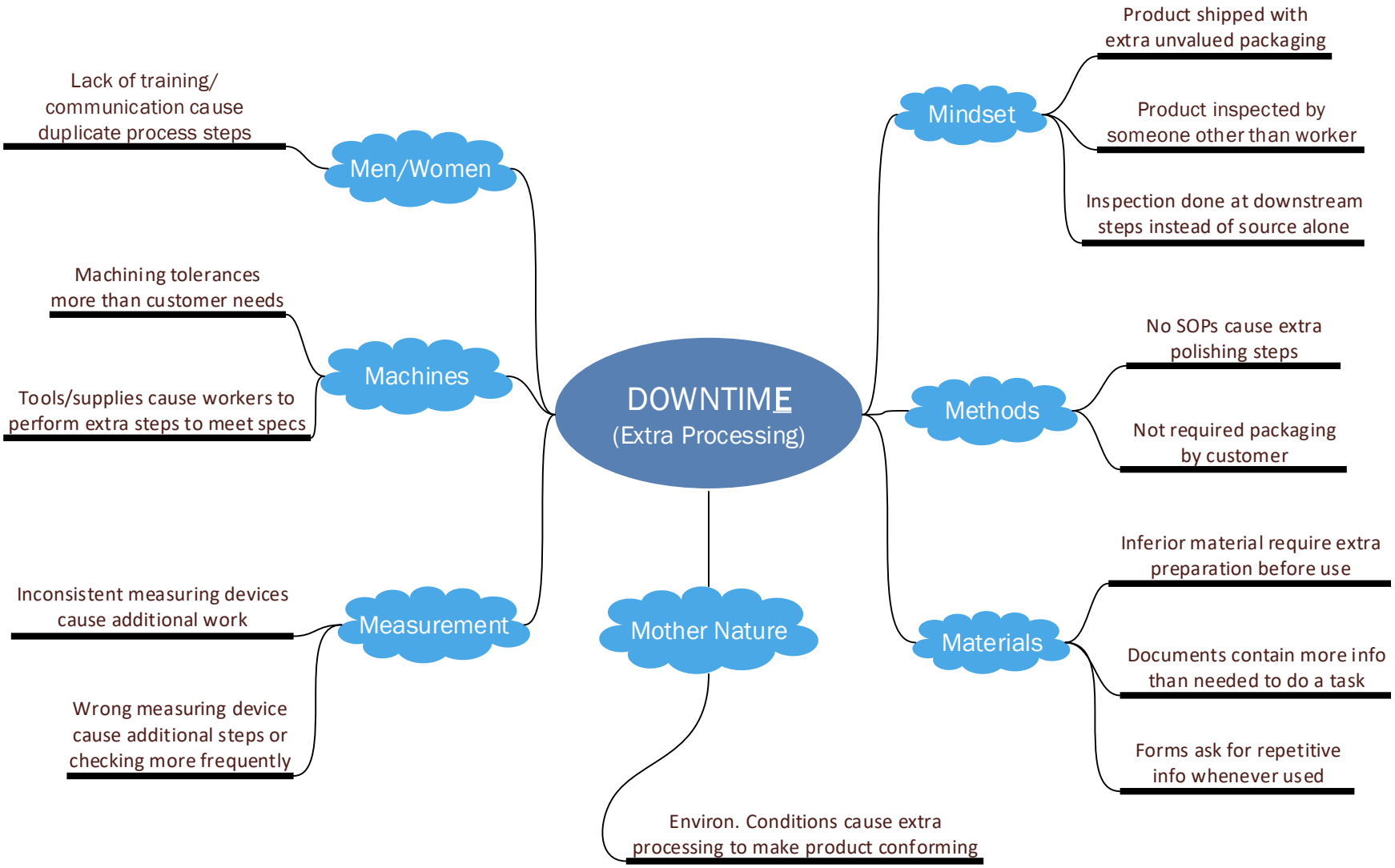

DOWNTIME
(Waiting)
Men/Women
Lack of training causing delay to proceed in work
Machines
Lack of TPM cause machine failures
Insufficient machines to keep process move
Measurement
Insufficient devices cause process to stop
Old/outdated measuring devices
Long calibration time
Mother Nature
Frequent blackouts
Undesirable weather conditions
Mindset
Overly cautious policies
Lack of trust amongst people
Unnecessary steps causing delays/idleness
Unnecessary approvals to proceed
Methods
Batch processing cause delays in downstream
Poor line balance cause bottlenecks
Materials
Inferior material cause delays/stops
Material untimely available
Material nonconforming to Specs


DOWNTIME
(Neglected Resources)
Men/Women
Ignored job rotation and cross-training
Training programs not in pace with tech and policies
Lack of training on new resources (e.g. s/w)
Machines
Lack of automation for time-consuming processes
Compatibility glitches b/w resources
Old version of s/w on machines used
Measurement
Gauges lay idle in storage
Good tools go unused
Mother Nature
Environment prevents use of good resources
Environment causes good resources to fail
Mindset
Mindset not technologically friendly
Outside consultants while talent exist in-house
Not utilizing newer s/w or upgrades
Methods
Not on top of technology
Ignored better tech
Newer, more efficient methods are rejected
Materials
Inferior material lessens productivity
Improper format/specs of material received by resources
Supplier doesn't employ Lean


DOWNTIME
(Transportation)
Men/Women
No training on proper use of material handling equip.
No training on e-communication instead of manual
Supply areas not located to reduce traffic
Machines
Improper alignment of machines in sequential production
Each job is not supplied with its necessary tools
Measurement
Material moved to measurement labs
Gauges fixed offsite when they breakdown
Mother Nature
Inefficient disaster plan to keep equipment safe in bad conditions
Material moved to proper areas during improper conditions
Mindset
Products/WIP moved to central staging area
Documents require signature are hand-carried
Methods
Proper movement of material/info not part of SOPs
Materials
Material requires controlled environ and transport
Volume of material delivered requires sorting and staging
Material is bulky to be kept on site
Multiple emails sent can be replaced with newsletter
Hand-carried info can be transported electronically


DOWNTIME
(Inventory)
Men/Women
Inadequate training on Lean to control inventory
Machines
Machines authorized in batch production causing excessive inventory
Machines with frequent breakdown requiring extra inventory replacement
Measurement
Inaccurate or non-calibrated meas devices cause rejects resulting in more inventory to be carried in the process
Mother Nature
Unprotected material damaged requiring replacement inventory
Mindset
Just-In-Case overrides JIT thinking
Inaccurate material requirement forecast
Methods
Inventory control SOPs not documented/followed
Kanban not used to communicate demands
Materials
Inferior material requiring quantities more than needed
Large MOQ from suppliers more than needed


DOWNTIME
(Motion)
Men/Women
No training to perform jobs with minimal reaching, bending, searching
No workers involvement in workplace design
Machines
Hand tools are used instead of power tools
On/Off and emergency switches not within reach
Tools/supplies/printers not within reach
Measurement
Measuring devices require bending/ awkward positioning
Meas. devices are not enough to share
Mother Nature
Environ. Conditions cause unnecessary motion; e.g. scattered papers from wind
Mindset
Workers caused to search for supervisors before they proceed
Unnecessary meetings
Lack of ergonomics practices adoption
Methods
Desks/workstations not ergonomically designed
Tools/materials not within ergonomic reach of workers
Materials
Materials need preparation/ unwrapping before use
WIP is not oriented to the best reach of next process


DOWNTIME
(Extra Processing)
Men/Women
Lack of training/ communication cause duplicate process steps
Machines
Machining tolerances more than customer needs
Tools/supplies cause workers to perform extra steps to meet specs
Measurement
Inconsistent measuring devices cause additional work
Wrong measuring device cause additional steps or checking more frequently
Mother Nature
Environ. Conditions cause extra processing to make product conforming
Mindset
Product shipped with extra unvalued packaging
Product inspected by someone other than worker
Inspection done at downstream steps instead of source alone
Methods
No SOPs cause extra polishing steps
Not required packaging by customer
Materials
Inferior material require extra preparation before use
Documents contain more info than needed to do a task
Forms ask for repetitive info whenever used