

Garment Production Management

Week 11

Capacity and Workforce planning

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Recap-previous week

- Production planning and control
- Capacity decisions
- Functions and objectives of PPC
- Production planning activities
- Aggregate planning strategies
- Production planning in garment industry

Lecture Learning Outcomes

1. Understand workforce planning concepts
2. Evaluate workforce planning strategies
3. Identify workforce planning process
4. Apply work force planning in garment industry context

Session outline

- Capacity planning concepts
- Workforce planning concepts
- Benefits of workforce planning
- Work force planning process
- Capacity and workforce planning strategies
- Workforce planning in garment industry

Capacity planning

Capacity Planning:

- The process of determining the **production capacity** needed to meet **changing demands for products or services**
- Capacity can mean machine hours, warehouse space, customer seats, or billable hours
- Effective Capacity = (Available Machines × Operating Hours) × (Available Skilled Workforce × Utilization Rate)

Workforce planning

- The human engine of capacity planning
- Systematic process of **aligning human capital with its business goals**
- Analyzing, forecasting, and planning workforce supply and demand
- Identifying gaps, and determine target talent management interventions
- Ensure the right **people**, with the right **skills**, in the right **places**, in the right **roles**, at the right time and at the right **cost**
- Operational capacity can not be achieved without the people to run it

Why workforce planning?

- Without workforce planning , organizations commonly suffer:
 - **Reactive hiring** (firefighting, paying premium for rushed recruitment)
 - **Skill shortages** in critical roles
 - **Surplus headcount** in declining areas (forced attrition or layoffs)
 - **Succession crises** when key people leave
 - **High overtime and burnout** from understaffing
- Strategic workforce planning turns human resource from a **cost center** into a **competitive advantage**

Workforce planning process

Step 1: Strategic context & business drivers

- What are the organization's top 3 goals (revenue growth, cost reduction, new product launch)?
- What external factors affect workforce? (AI automation, labor market tightness, retirement bubble)
- **Output:** A workforce planning charter linking headcount to business outcomes.

Workforce planning process

Step 2: Demand analysis (Future needs)

- **Quantitative:** Forecast workload → translate to **full time equivalents (FTEs)** needed by role
 - Required FTEs = (Total forecasted hours of work) / (Productive hours per full time equivalents)
 - **Qualitative:** What new skills will be needed? (e.g., AI, data analytics, foreign languages)
- Output:** Future-state headcount and skills matrix (by role and department)

Workforce planning process

Step 3: Supply analysis (Current inventory)

- Assess existing workforce in three dimensions:
 - **Headcount:** How many people currently in each role?
 - **Capability:** Skills, certifications, **proficiency levels** (use a skills inventory or matrix)
 - **Availability:** Expected attrition (retirement, voluntary turnover, leaves, promotions out)
- Available FTEs = Current headcount × (1 - expected annual attrition rate) × average utilization %
- **Internal mobility:** Who is ready for promotion? Who wants a lateral move?

Workforce planning process

Step 4: Gap analysis (The Net need)

Scenario

Solutions

Surplus: More manpower than needed

Redeploy, reduce hours, outplacement, layoffs
(last resort)

Shortage: Fewer manpower than needed

Hire, contract, upskill, automate, outsource

Skill mismatch: Right number, wrong skills

Reskill/upskill, recruit new profiles, replace

Compare Demand (Step 2) Vs. Supply (Step 3)

Workforce planning process

Gap Calculation:

- Demand for garment professionals in 2026: 50 FTEs
- Current supply: 45 FTEs, but 5 will retire → effective supply = 40 FTEs
- **Gap = +10** new hires needed

Workforce planning process

Step 5: Action plan

Workforce filling: Ranked from fastest/cheapest to slowest/costliest

1. **Buy** – Recruit externally (direct hire, agency, campus)
2. **Build** – Upskill/reskill existing employees (training, rotations)
3. **Borrow** – Use contingent workers (temps, contractors, gig platforms, freelancers)
4. **Bot** – Automate tasks (RPA, AI, self-service tools)
5. **Bind** – Retain critical talent (retention bonuses, career paths, flexible work)

For surplus situations, the 5 R:

- **Redeploy, Reskill, Reduce hours, Release (layoff), Retire early**

Workforce planning process

Step 6: Monitor & Adjust

- Review quarterly (not annually)
- Track leading indicators: Time-to-fill, offer acceptance rate, internal mobility rate, skill gap closure rate
- Adjust hiring plans based on rolling 12-month forecast

Workforce planning process

Workforce planning methods & approaches

- **Top-down (Budget driven)**
 - Leadership sets headcount limit or cost limit
 - Departments compete for slots
 - Suitable for cost-cutting, stable industries, mature companies
- **Bottom-up (Demand driven)**
 - Managers forecast workload, derive required FTEs
 - Aggregated to total headcount need
 - Suitable for growth mode, project-based work, dynamic environments
- **Zero-based workforce planning**
 - Justify every role annually (no automatic backfill)
 - Suitable for turnarounds, restructuring, non-profits

Workforce planning process

Workforce planning methods & approaches

- **Span of control analysis**
 - Analyze ratio of managers to individual contributors
 - Optimize layers and supervisory load
 - Suitable for flattening organizational structure
- **Workload analysis**
 - Measure actual time spent on tasks vs. available hours
 - Identify over/underutilization
 - Suitable for productivity improvement, overtime reduction

Workforce planning process

Workforce planning methods & approaches

- **Delphi method**
 - Iterative, anonymous expert panel (internal + external) reaches consensus through multiple rounds of questioning
 - Suitable for long-term, uncertain, or novel scenarios; reduces groupthink
- **Workforce environmental scan**
 - Systematic analysis of external factors (legal, tech, economic, social) that will affect future roles and skills
 - Anticipating disruptive changes (e.g., AI, remote work)

Workforce planning process

Workforce planning methods & approaches

- **Succession mapping**
 - Identify potential internal replacements for key roles and ready now, after 1–2 yrs, or 3+ yrs
 - Suitable for leadership continuity, critical role risk management
- **Job task analysis**
 - Break jobs into specific tasks
 - Determine which tasks will be automated, outsourced, or retained
 - Suitable for digital transformation, process redesign

Workforce planning process

Workforce planning methods & approaches

- **Strategic workforce planning**

- Link workforce scenarios directly to business strategic drivers (e.g., entering new markets, launching products).
- Suitable for executive level 3-10 year planning horizon

- **Managerial estimates**

- Qualitative judgmental approach
- Line managers and supervisors directly estimate future staffing needs (top-down or bottom-up)
- Suitable for Fast, low-cost; relies heavily on manager experience

Workforce planning process

Workforce planning methods & approaches

- **Quantitative techniques- Trend analysis**
 - Extrapolate past skill needs into the future based on historical business volume
 - Examples: **sales, production units**
 - Suitable for Stable environments with reliable historical data
- **Quantitative techniques- regression analysis**
 - Statistical relationship between workforce size and multiple drivers (e.g., revenue + customers + transactions)
 - Suitable for complex organizations with multiple demand drivers

Workforce planning process

Workforce Planning Methods & Approaches

- **Skills-Based / Capability Planning**
 - Focus on skills inventory, not just headcount
 - People move across projects as needed
 - Suitable for consulting, tech, R&D, matrix organizations
- **Scenario planning**
 - Build 3 scenarios (optimistic, baseline, pessimistic) with different demand assumptions
 - Define triggers to switch between plans
 - Suitable for high uncertainty (new markets, volatile demand)

Capacity and workforce planning strategies

Strategy 1: Level capacity + Level workforce

- Keep workforce constant
- Produce at a steady rate
- Build inventory during low demand
- Draw down inventory during peaks

Workforce planning: Hire once. Train once. Stable schedules.

- **Example:** Automotive parts manufacturer – runs same shifts year-round, stocks components for seasonal assembly plants
- Requires a storage space, working capital for inventory, predictable demand cycles

Capacity and workforce planning strategies

Strategy 2: Chase Demand – Variable Workforce

- Hire and lay off (or use temps) as demand changes
- Capacity equals demand each period

Workforce planning: Heavy reliance on contingent workers, temp agencies, gig platforms

- **Example:** Agricultural harvesting – seasonal workers hired for 6–8 weeks
- Requires fast hiring process, low training time, ready labor pool

Capacity and workforce planning strategies

Strategy 3: Overtime / Undertime (Hours Chasing)

- Keep core headcount fixed at base demand level
- Use overtime for peaks
- Use undertime (reduced hours) or furloughs for troughs

Workforce planning: Core team is permanent; hours vary

- **Example:** Public accounting firm – 40 hours/week normally, 60–70 hours during tax season
- Requires willing workforce, legal overtime limits, fatigue management

Capacity and workforce planning strategies

Strategy 4: Subcontracting (External Capacity)

- Maintain internal capacity for baseline demand. Contract overflow to third parties.

Workforce planning: Internal workforce stable. External vendor handles peak variability.

- **Example:** E-commerce fulfillment center – internal warehouse handles 70% of volume; 3PL handles seasonal surge.
- Requires vendor qualification, clear SLAs, integration costs.

Capacity and workforce planning strategies

Strategy 5: Mixed / Hybrid (Most common)

- Combine level + chase + overtime + subcontract in a planned hierarchy
 - Tier 1 (Core): 70% of peak demand – permanent, fully trained
 - **Tier 2 (Flex):** 20% – part-time or temps with moderate training
 - Tier 3 (Peak): 10% – overtime on Tier 1 or subcontract

Workforce planning: Three-tier talent model with different commitment levels

- **Example:** Call center – permanent staff handle baseline, part-timers cover afternoon peaks, overtime for surprise spikes
- Requires workforce segmentation, coordination across tiers

Workforce planning in garment industry

- Faces a unique set of interconnected challenges that stem from:
 - Labor-intensive nature of the sector
 - Globalized supply chains
 - Pressure for fast, low-cost production
- These challenges can be broken down into four primary areas
 - Systemic labor compliance
 - Skill shortages
 - High turnover
 - Forecasting difficulty in a volatile market

Workforce planning in garment industry

Systemic wage & compliance issues:

- Gap between legal minimum wages and a living wage, which fuels high turnover and social compliance risks
 - **Minimum wage and living wage**
 - Substantial gap between minimum wage and a living wage.
 - Primary driver of labor unrest
 - **Compliance violations**
 - Critical violations related to working hours and wages are notably higher in some countries.
 - Failure to address these issues can lead to **strikes, order cancellations from brands, fines, and a damaged reputation**

Workforce planning in garment industry

Skill Gaps vs. Industry 5.0

- Industry moves towards more flexible, technology-driven "Industry 5.0" models
- A major barrier is the lack of a skilled workforce

Outdated skills:

- Shift from mass production (**made to stock**) to flexible, customized production (**made to measure**)
- Workers should have skill in **quality control, machine maintenance, and digital literacy**
- This skills are often in short supply

Workforce planning in garment industry

Skill Gaps vs. Industry 5.0

Training Lag:

- Educational and vocational training programs are not keeping pace with industry needs
- Factory managers often report low productivity due to training gaps

Technological Adoption:

- Implementing automation, AI for forecasting, or new scheduling systems **fails without a workforce capable of using these tools**

Workforce planning in garment industry

High turnover & retention challenges:

- High employee turnover is both **a cause and a consequence** of poor workforce planning, leading to constant disruption and cost

Motivation & Fatigue:

- Workers are prone to **monotony and fatigue** due to repetitive tasks
- Lack of clear career progression paths, leads to **low motivation and high absenteeism**

Instability Costs:

- High turnover results in a **constant cycle of hiring and training** inexperienced staff
- **New workers have** lower productivity and higher error rates
- Impact profitability and increase workload on existing staff

Workforce planning in garment industry

Traditional vs. Dynamic Forecasting

- Traditional workforce planning methods **are failing to cope with the modern industry's volatility**

Static models:

- Many factories still rely on static scheduling and historical data to plan labor
- This approach is ill-suited for fast fashion, unpredictable demand, and sudden disruptions (e.g., raw material delays)

Consequences:

- Rigid planning leads to **idle time** when demand is low (wasting labor costs)
- **Excessive, costly overtime** and missed deadlines when demand spikes
- Unplanned overtime can also push factories into non-compliance with labor laws

Core metrics for workforce planning

Metrics or criteria	Description	Target/Interpretation
Headcount variance	Actual headcount vs. planned	±5% acceptable; larger gaps indicate poor forecasting
Turnover rate	$\text{Voluntary exits} / \text{Average headcount} \times 100$	Benchmarks vary (retail 60%, tech 12%, govt 7%)
Time to fill	Days from req open to acceptance	>45 days may indicate tight labor market
Offer acceptance rate	Accepted offers / Total offers extended	<80% suggests compensation or brand issues
Internal mobility rate	$\text{Internal hires} / \text{Total hires} \times 100$	>30% indicates healthy development culture
Critical role coverage	Number of critical roles with a ready successor	Target 80%+ for senior/key roles
Skill gap index	$\text{Number of required skills not present} / \text{Total required skills}$	>20% triggers training or hiring plan

Summary

- **Workforce Planning** aligns human capital with business goals
 - Right people, skills, places, roles, time, cost
- **Workforce Planning Process (6 Steps)**
 - Strategic context & business drivers
 - Demand analysis (future FTEs needed)
 - Supply analysis (current inventory + attrition)
 - Gap analysis (demand – supply)
 - Action plan (Buy, Build, Borrow, Bot, Bind)
 - Monitor & adjust (quarterly)

Summary

Capacity & workforce strategies

- Level capacity + Level workforce
- Chase demand – Variable workforce
- Overtime / Undertime (Hours chasing)
- Subcontracting (External capacity)
- Mixed / Hybrid strategy

Garment industry challenges

- ❖ Systemic wage & compliance issues (minimum wage vs living wage gap)
- ❖ Skill gaps vs Industry 5.0 (outdated skills, training lag)
- ❖ High turnover & retention challenges (monotony, fatigue, instability costs)
- ❖ Traditional vs dynamic forecasting (static models fail fast fashion)

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Thank You !

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