

Strategic workforce planning: case study of the Algerian company for the management of the electricity transmission network between 2015- 2018

Rim Laouadi

University of Algiers3–Algeria

laouadi.rym@univ-alger3.dz

Reçu le :29/04/2023

Accepté le :29/06/2023

Publié le :30/06/2023

Abstract:

The purpose of this paper is to clarify the application method of strategic workforce planning and identify its main steps through a case study conducted at the Algerian Electricity Transmission Network Management Company (ACMETN). Using the interview and company documents as tools for data collection and analysis, the research shows that the company is correctly using strategic workforce planning, which is aligned with its strategic guidelines. However, it has some shortcomings, especially concerning the lack of future job predictions, which may lead to strategic imbalances such as the inability to accurately define strategic job positions.

Keywords: Strategic workforce planning; Competency management; HRM; Strategy; Strategic HRM.

Jel Classification Codes : M5 ; M150 ; M120

ملخص:

الهدف من هذه الورقة البحثية هو توضيح طريقة تطبيق التخطيط الاستراتيجي للقوى العاملة وتحديد الخطوات الرئيسية المتبعة لتطبيقه. تم اعتماد الشركة الجزائرية لإدارة شبكة نقل الكهرباء (ACMETN) كدراسة حالة. وتم استخدام المقابلة ووثائق الشركة كأدوات لجمع البيانات وتحليلها. أظهرت النتائج أن الشركة تستخدم التخطيط الاستراتيجي للقوى العاملة بطريقة صحيحة تتماشى مع توجهاتها الاستراتيجية، غير أنها تحتوي على بعض أوجه القصور، لا سيما عدم التنبؤ بالوظائف المستقبلية، مما قد يؤدي إلى اختلالات استراتيجية كصعوبة تحديد المناصب الاستراتيجية بدقة. الكلمات المفتاحية: المخطط الاستراتيجي للعمال؛ إدارة الكفاءات؛ إدارة الموارد البشرية؛ إستراتيجية؛ إدارة الموارد البشرية الإستراتيجية.

تصنيف JEL: M50؛ M150؛ M120

I. Introduction:

Hiring the right person at the right cost, at the right place and time could directly achieve the strategic goals, which is the outgrowth that all companies strive to attain. Therefore, Strategic Workforce Planning (SWP) is the tool that allows the company to carry out that action. However, SWP is a complicated approach that requires correct application, otherwise, it will cause considerable imbalances such as; difficulty in identifying strategic job positions, skill gaps, succession planning issues, and misalignment with the strategic goals of the company. The purpose of this paper is to present the correct way to apply the SWP and project it on the Algerian Company for the Management of the Electricity Transmission Network (ACMETN) to deduce the shortcomings and their solutions.

I.1. What is the strategic workforce planning:

Strategic workforce planning involves analyzing organizational goals and aligning staffing decisions with strategic objectives to achieve success and growth (Bechet , 2008).By analyzing current and desired workforce states, identifying gaps, and guiding improvements (Sparkman , 2018). It is a comprehensive plan for matching the best configuration of quantity and quality of people to do the work and achieve the desired work results (Rothwell, Graber , & McCormick, 2012). Therefore, the SWP cares about the quantity and quality of HR who are aligned with the strategic goals of the company and their achievement.

I.2. The strategic workforce planning process:

To create a SWP system among the company, there are some steps to be followed. According to that (Mayo , 2015) identifies four steps which are:

1. Workforce demand assessment;
2. Gap identification;
3. Supply assessment;
4. Strategic decisions to close the gap.

In a holistic approach (Tamronglak, 2019) determines the steps as follows:

1. Determine strategic direction;
2. Workforce analysis (demand, supply, gap);
3. Development plan and implementation;
4. Follow-up, evaluation and revision.

Also in a more detailed approach (Huber, 2012) proposes the following steps:

1. Definition of the strategic direction;
2. Scan of internal and external environment;
3. Analysis of current workforce;
4. Identification of future workforce needs;
5. Identification of gaps;
6. Implementation of staffing strategies;
7. Evaluation of staffing actions.

From the processes presented above, all of them have the demand, supply, gap assessment, and plan development as steps of the strategic workforce planning process. These steps are formulated as follows in this article:

- Assessment of current workforce;
- Assessment of future workforce supply;
- Assessment of the gap in the workforce;

- Development of a work plan aligned with strategic directions.

In this article, the above-mentioned steps are considered to be the SWP process steps, and their application method by the ACMETN will be next described.

II. Methods and Materials:

This study was conducted at the Algerian Company for the Management of the Electricity Transmission Network (ACMETN). This company was chosen because it uses the SWP system, which serves the aim of the study. It also provides a clear overview of the method that the ACMETN uses to predict its workforce and jobs for the year 2019.

The study method is based on the presentation of the company’s documentation and its analysis. For that, documents like age and seniority pyramids are used to assess the current workforce in the company.

In addition to the workforce evolution and the previous years’ workforce statistics documents, these are the primary bases of the predictions and forecasts, which will be essential to demonstrating the practical application of the SWP process in the ACMETN in regards to the workforce supply and gap analysis.

Finally, the predictions will be integrated into a work plan that is aligned with the company’s strategic guidelines.

It should be noted that the interview was one of the data collection tools and was used as a means of linking and clarifying the content of the company's documentation and the way it applied the SWP. All the information mentioned above as a research method will be detailed in the next section.

II.1.The assessment of current workforce:

The ACMETN analyses its current workforce based on the ages pyramid and the seniority pyramid as follows:

Table (1) : Age pyramid

Designation	≥25	25-29	30-34	35-39	40-44	45-49	50-54	55-60
Total	5	189	811	754	575	433	266	150
Percentage	0.16%	6%	25%	24%	18%	14%	8%	5%

Source: The ACMETN documentation

It can be noticed from the table above that youth represent the largest category of the workforce in the ACMETN, with a percentage of 56%, which is equivalent to 1757 workers less than 40 years old. These results can be interpreted based on the recruitment process, which is periodic and based on the employment of university graduates.

Table (2) : Seniority pyramid

Designation	≥5	5-9	10-14	15-19	20-24	25-29	30-34	≤35
Total	652	1302	339	360	147	259	88	43
Percentage	21%	41%	11%	12%	4%	8%	3%	1%

Source: The ACMETN documentation

From the table above, it can be noted that more than 62% of the workers at ACMETN have less than 10 years of experience, and this is due to the latest recruitment history, which results in the recruitment of the equivalent of 1945 workers who require special accompaniment and supervision in order to be able to acquire knowledge that will help them perform their work effectively.

II.2.Estimation of the supply of current and future workforce:

The ACMETN estimates the internal supply of current and future human resources by following a set of procedures:

- Recruitment forecasts (workforce needs, workforce evolution, The recruitment sum of the last three years, projections in view of the strategic goals);

- Retirement forecasts;
- Resignation forecasts.

II.2.1. Recruitment forecasts: This process consists of four essential steps, which are:

- Workforce needs;
- Workforce evolution;
- The recruitment sum of the last three years;
- Projection in view of the strategic goals. These steps will be detailed in the following.

II.2.1.1. Workforce needs: This step helps the company assess the quantity and quality of the needed workforce for better predictions. Consequently, the following table shows the company's workforce needs in quantity and quality at the ACMETN.

Table (3): Workforce needs predictions

Designation	Executives	Control agents	Execution	Total
Network development	0	72	8	80
Projects and studies	1	22	0	23
Strengthening maintenance teams lines	0	26	4	30
Retirement replacement	0	7	4	11
Total	1	127	16	144

Source: The ACMETN documentation

The previous table shows that the company's workforce needs for the year 2019 were estimated at 144 workers, which were divided as follows:

- Restoring projects and studying activity to follow up on what has been achieved by opening new lines, which required hiring 23 workers;
- Operating new stations and developing the electricity transmission network, which urged the necessity of hiring 80 workers;
- Replacing the individuals concerned with retirement which required hiring 11 workers.
- The expected employment at the **internal level** was estimated at 20 workers, 17 of whom are control agents, and the remaining 3 represent execution.

II.2.1.2. Workforce evolution: in order to analyze the workforce evolution, the ACMETN relies on the data of the previous year and the budget of the current year, as explained in the following table:

Table (4): Workforce evolution rate

Designation	Workforce in 31/12/2017	Potential recruitment in 31/12/2018	Actual workforce in 30/9/2018	Potential workforce in 31/12/2018	2019 budget	Potential departures in 2019	Potential workforce in 2019
Total	3213	65	3181	3198	144	22	3320
Percentage	-1%	/	/	0.74%	/	/	4%

Source: The ACMETN documentation

From the table above, it can be noted that potential employment for the year 2019 increased by 4%.

II.2.1.3. The recruitment sum of the last three years: in order to follow up and open new positions, the recruitment sum for the previous four years in the ACMETN is as follows:

Table (5): Previous years recruitment sum

designation	2015	2016	2017	2018
Total	171	191	72	39

Source: The ACMETN documentation

From the table above, it can be noticed that the ACMETN witnessed a decrease in the recruitment sum during the two previous years.

II.2.1.4. Projection based on strategic goals: The employment plan for the year 2019 was developed taking into consideration the company's strategic goals, which are:

- Developing the electricity transmission network by raising the carrying capacity to 400 kilowatts;
- Develop the competencies of individuals;
- Reinforcing the maintenance structures, in particular the electric lines maintenance and operating teams;
- Local employment for young graduates.

II.2.2. Retirement forecasts: The ACMETN offers the opportunity to pre-retire by providing a number of privileges. This is with the aim of integrating young people into the world of work. The following table shows the retirement forecasts:

Table (6): Retirement forecasts

designation	executives	Control agents	execution	Total
Total	2	16	4	22

Source: The ACMETN documentation

Through the data mentioned in the table above, it can be seen that the prediction of retirement during the year 2019 includes 22 individuals, of which 82% are in the technical category, which is equivalent to 18 individuals, and 18% are in the management category, which is equivalent to 4 individuals. Accordingly, seven individuals will be employed, assigned as follows: six as control agents and one as execution.

II.2.3. Resignation forecasts: The resignation rate was predicted during the last three years at 0.5% of total employment per year, which can be highlighted in the following table:

Table (7): Previous years' resignation

Designation	2016	2017	2018
Total	10	18	21
Percentage	0.33%	0.56%	0.65%

Source: The ACMETN documentation

From the table above, it can be noted that in the last three years, the ACMETN has witnessed the resignation of 49 individuals, which is equivalent to a rate of 63% in the executive category and 82% in the technical category, which represents 40 resignation cases divided as follows:

- 33 cases of resignation after nomination (20 engineers and 13 basic technicians);
- Seven cases of resignation before nomination (6 engineers and one basic technician).

Finally, at the end of the second step of the SWP process, it comes to the potential supply of the workforce, as demonstrated in the table below:

Table (8): Potential workforce supply

designation	Executives	Control agents	Execution	Total
Management	0	3	2	5
Technical	1	124	14	139
Total	1	127	16	144

Source: The ACMETN documentation

From the table above, it can be seen that the recruitment forecasts for the year 2019 were mostly dedicated to the technical category. This is due to the strategic goal of the company, which aims to increase the productivity in the technical category.

II.3.Gap analysis:

Based on the answers obtained from the interviews with the personnel of the human resources department, it became clear that the ACMETN analyzes the differences in human resources. This process results in five cases, and in each case it goes through a set of steps based on a number of techniques, as explained in the following section.

II.3.1.First case: The company has the qualified workforce to fill the positions:

In this case, the company does not attract individuals from outside but rather gives priority to individuals from inside, taking the necessary steps to appoint them to their new positions. In addition, to provide them with the necessary skills throughout training, the selection here is based on certificates and experience.

II.3.2. Second case: The company has vacant positions and no qualified workforce to fill them:

Here, the company resorts to external recruitment and targets universities, training companies, and employment agencies, in addition to job advertisements. The individual's qualifications must match the requirements of the position. In this case, after the company follows the appropriate procedures, he is placed in his job, and the direct supervisor follows up on him, directs him, and informs him of the tasks to be performed. The follow-up process must take enough time for the individual to acquire the necessary experience to perform his work efficiently.

II.3.3. Third case: The company predicts which positions will be vacant in five years:

If there is a high-qualified position and no qualified workforce to fill it from inside, the company resorts to external recruitment with the training process when the individuals applying for the position do not have the required skills (academic qualifications with no high skills). During the first two months, integration programs are planned to help new recruits get acquainted with the general environment of the company. At the end of the integration period, new recruits are asked to complete the tasks assigned which enable the company to evaluate them. The outputs of the evaluation process are used as inputs for the training programs. These programs are not standardized but vary according to the cognitive characteristics of the individuals and their ability to learn. Based on the individual's differences, the training period is determined, which can last up to a full year. After appointing the individual to the position and its responsibilities within a maximum period of four years, the company re-announces the position for the second time. Individuals applying for the position are subject to an interview, and among them is the previously trained one, for whom the committee conducts tests to assess whether the required skills and competencies have been attained or whether there are deficiencies that prevent his final designation. A trained individual is often selected. However, he will be under observation for

another year and subject to the trimestral evaluation, during which he must acquire new skills and prove his efficiency to achieve the goals that the company and the position require, if that is the case, he will be subject to the final evaluation, or ‘confirmatory evaluation process’ in order to be actually appointed to the position.

II.3.4. Fourth case: The company predicts the individuals who will retire and has suitable individuals to fill those jobs, but their number exceeds the number of vacancies:

Here, the company follows certain conditions for selection. In order not to fall into the errors of bias, it must return to the pyramid of seniority to choose the most senior because they have the same skills and competencies (the ACMETN gives priority to seniority). The company places the selected individual in interim status to test his capabilities before he assumes the responsibility of the position. If the position becomes permanently vacant, priority goes to the interim individual, as he acquired the necessary experience.

II.3.5. Fifth case: The company has the workforce as well as the positions:

The company advertises job openings with a description of the required qualifications. Applicants possessing the necessary qualifications apply for the position and endure an employment interview with the assigned committee. The committee may reject all applicants if it notices that they are not yet ready to occupy positions that require high skills, but it remains forced to choose the most qualified among them and put him in the position of interim, which may last two years at most. The individual appointed to the position during the interim period must present all efforts that enable him to stand out, because the opposite case will lead the company to external recruitment.

Afterwards, the ACMETN submits job offers again, and the committee interviews the applicants, including the interim individual, and tests whether the interim period spent by this individual in the position was sufficient to bridge the gap between his qualifications and the requirements of the position and whether or not he can fill it permanently. However, in general, the period spent in the position is sufficient to eliminate the deficiencies that were noticed in the first job interview. Before final designation, the latter is subjected to a trial period in which his direct supervisor evaluates him until he is finally appointed to the position. The ACMETN is compelled to these proceedings in the case of high competency positions.

At this stage, the ACMETN predicts the referral to retirement, which represents a gap that must be corrected either through promotion or employment:

- Promotion: here, the company returns to the pyramid of seniority as a requirement to choose the individual who can fill the position in the coming years. Who will be subjected to a trial period accompanied by the individual currently appointed to the position (the one who will retire) as a mentor.

-Recruitment: in which the future needs of the workforce are predicted within a full year. And then the vacant positions are announced at the employment agency (ANEM), and the recruitment process takes place in the same period of the year, where the new recruits join their positions, accompanied by the individual currently appointed to the position as a mentor. This is what the ACMETN calls ‘choking’, or, in other words, the company is aware of the vacancies in the near future.

As a result, when carrying out the recruitment plan, the ACMETN faces two situations:

-Surplus:

When there is a surplus in a position, the ACMETN transfers individuals to other positions that are compatible with their skills and serve the goals of the company at the same time. This is what is called ‘redeployment’. And for that purpose, when the ACMETN faced the same situation, it created a new structure for communication to redeploy this surplus, as well as due to its importance since the company's policy is against layoffs.

-Deficit:

Here, the company doesn't have a qualified workforce to fill the vacant positions. This prompts it to choose the most suitable individuals from among the applicants and evaluate their

skills and knowledge. This is what the ACMETN calls the prospectus. This period can last from one to nine months. In addition, during this period, the ACMETN announces the internal position (local), and in the case of incompatibility, the position is announced in the SONELGAZ group (partial), and then it is announced externally (global).The recruitment process at this stage consists of placing the person in the position and observing his adaptation to the work environment, as well as the position that he will occupy in the interim for a certain period before being appointed to the position.

II.4. Work plan development:

Based on the analysis presented above, the ACMETN has developed a plan that includes recruitment and training, as explained in the following:

II.4.1. Recruitment: The ACMETN built a recruitment plan that includes workforce development, a pyramid of ages, a pyramid of seniority, available supply estimation, and possible mobility based on the presented gap presented. Accordingly, the company allocated a budget for this plan, which was estimated at 99,995,662 AD for the year 2019.

To predict the salary mass for the year 2019, the ACMETN relies on the data of the three preceding years, as follows:

Table (9): Previous years salary mass

years / indicators	2016	2017	2018
Salary mass (in billion AD)	4150	4553	5011
Growth ratio (n/n-1)%	4%	10%	10%

Source: The ACMETN documentation

It’s important to mention that the salary mass witnessed an increase due to the adjustment of the reward system in the company. Based on data mentioned in the table above the ACMETN predicts a salary mass of 48,470,000 AD.

II.4.2. Training: The ACMETN has developed a five-year forecasting plan aimed at training the individuals who will occupy strategic positions by providing them with the needed knowledge in the fields of electricity transmission and distribution/maintenance operations, within the following strategic objectives:

- Inclusion of new recruits;
- Create homogeneity between the individual’s characteristics and the company’s environment;
- Mentoring through the creation of manuals that organize the work axes;
- Updating individuals’ knowledge according to new technologies.

Also in the collective agreement framework, the ACMETN plans to:

- Create cooperation in the field of scientific research activities and technological development;
- Build strategies aiming to involve young competencies in the professional field.

The training forecast plan is divided into three sections (Types, means, and budget) and this is what will be explained in the following section.

II.4.2.1. Training types forecast: Future training activities will be dedicated to the development of operations and maintenance employees in various programs, as mentioned in the following table:

Table (10): Training forecast by types

Training for succession in responsibility positions	Training for succession in main positions Pro. Training of senior tech. in electricity transmission	Training for under pressure positions	Training by foreigners	Other training activities	Total
9	74	20	413	599	1133

Source: The ACMETN documentation

In addition to the previous training types, the training on occupational safety and security has been placed to touch 546 individuals in all categories.

II.4.2.2. Training means forecasting: Training means for the year 2019 vary between institutions, tutors, and mentors as follows:

- Training in institutions (electricity, occupational safety and security, etc.);
- Training about new equipment from foreign suppliers;
- Training in special ways:
 - Technical field: equipment use, protection, etc.
 - Administrative field: personnel management, use of automated devices, etc.
- Special training for executive management in the context of succession;
- Pedagogical training;
- Training in languages and information technology;
- Optical fiber training;
- Apprenticeships and practical internships: as part of the company's youth focus policy, 65 trainees and 188 apprentices will be supported.

II.4.2.3. Training budget forecast: The costs allocated to the training plan for the year 2019 were estimated at 21,074 AD. This represents 0.42% of the ACMETN business number and 4.35% of its salary mass.

III. Results and discussion:

After presenting the ACMETN’s application method of the SWP that is aligned with the literature review of this subject, it can be argued that the ACMETN uses the SWP correctly, despite some shortcomings that don’t strongly affect the efficiency of the whole process of the SWP.

Assessment of the current workforce: The company performs the quantitative and qualitative assessment of jobs and workforce based on a group of cases previously mentioned, and thus the company uses a set of prediction tools such as the pyramid of age, the pyramid of seniority, job description cards, and evaluation forms for the three categories (Executives, Control agents, and Execution).

The company's forecasts depend mainly on the size and nature of the business, which are aligned with its strategy and help achieve the company's overall objectives.

Although this method allowed the company to select the right individuals and attract competencies, it is not sufficient to make quantitative and qualitative forecasts of jobs and the workforce because it does not use all the existing tools at this stage, including the competencies budget or job structure (Picardi, 2020), which means that the company makes its estimation using traditional methods.

Assessment of the future workforce supply: The company estimates the supply of its current and future workforce by forecasting its future needs for human resources as well as following up on any changes that may occur in its human resources during the coming years, such as hiring, promotion, resignation, etc.

The company makes these predictions in order to avoid the risk of positions being vacant at critical times and not being filled by the right individuals. The interview also confirmed that the company makes these predictions in real time and is keen to follow up on the labor market and protect its competencies from being attracted by competitors.

Here, it should be noted that the employment policy in the company gives priority to internal recruitment over than external recruitment, especially in senior positions with high responsibilities.

Assessment of the gap in the workforce: Through the correct analysis of what was estimated in the two previous phases of SWP, which is based on a set of factors as well as the constant follow-up of the labor market, the company estimates the gap in the workforce in an effective manner.

It should also be noted that the company has all the financial and supervisory capabilities that enable it to finance training programs such as training missions abroad and places designated for training such as laboratories and halls equipped with all needed devices, through which it is able to carry out recruitment and training schemes that enable workers to achieve a good return on the company with significant profits.

Development of a work plan aligned with strategic directions: The company adopted a work plan based on the analysis of differences, which it considers a part of its strategy. This plan is medium-term and includes all categories present in the company (executives, control agents, and execution).

The strategic objectives that the company aims to accomplish through this plan are to carry out the training and employment processes efficiently, reveal its competencies, study the market in terms of demand, and fill the open positions with the available competencies.

VI. Conclusion:

The purpose of this paper is to clarify the application method of strategic workforce planning and identify its main steps through a case study conducted at the Algerian Electricity Transmission Network Management Company (ACMETN). Using the interview and the company documents as tools for data collection and analysis, the research shows that the company correctly uses strategic workforce planning, which is aligned with its strategic guidelines. However, it has some shortcomings, especially not taking into consideration future job predictions.

Based on the study analysis, there are no predictions on the positions descriptions, if they are strategic or not, or to what degree they are, which may lead to strategic imbalances such as the inability to accurately define strategic job positions.

Relying on internal recruitment can shorten its chances of recruiting new people who can bring new ideas and creativity.

The strategic workforce planning of the ACMETN is based on paper documentation and previous data, even though it uses special software for the SWP.

Although this study shows the practical way of implementing a SWP in an Algerian company simply and clearly, it only focuses on the correct steps to be used; that is to say, that this study doesn't give a detailed answer on the SWP matter, especially since it is based on only one company, which can shorten the findings of the research. But it can be the foundation for a study about the tools used in every step and a more detailed approach to the practical application of the SWP.

Referrals and references:

1. Bechet Tomas (2008), Strategic staffing (éd. 2nd), USA: Amacom, p.6.
2. Huber C. (2012), Strategic workforce planning in Dutch organizations: A contingency perspective, Master's thesis, Tilburg: Tilburg university, Faculty of social sciences, P.9.
3. Mayo Andrew (2015), Strategic workforce planning: A vital business activity, Strategic HR review, 14(5), pp.174-181.
4. Picardi Carrie (2020), Recruitment and selection: Strategies for workforce planning & assessment, USA: Sage publications, pp.4-8.
5. RothwellWilliam, Graber James & McCormick Neil (2012), Lean but agil: Rethink workforce planning and gain a true competitive edge, USA: Amacom, p.13.
6. Sparkman Ross (2018), Strategic Workforce Planning: Developing optimized talent strategies for future growth, London: Kogan Page, p.4.
7. TamronglakAmporn (2019), Strategic workforce planning for Thailand public sector, International journal of public sector performance management, 5(1), pp.6-25.