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“There is no such thing as job security. Jobs are controlled by others and that typically removes most forms of security. However, engineers can develop career security. So, to be successful, you need to plan and control your career.”

This quote is from an experienced engineer, Larry Dwon. It is based on his more than 60 years of engineering practice and is an important message for each of us in engineering.

Engineering careers do not start upon graduation with undergraduate and graduate degrees. They actually start when you enter your freshman year in the engineering college or before. Your career includes your selection of a specific type of engineering and elective courses to prepare you to achieve your career goals. You can enjoy an incredible journey if you take an active role in planning and managing your career.

THE CAREER PLAN

To establish a successful career plan, each part of the planning process should relate to the overall objectives of your personal life. It starts with the development of your personal and professional visions. It includes a strategy of goals and skill needs, an action plan, implementation of the action plan, and documentation and evaluation of results. Your career plan should be dynamic and include changes in your career and life.

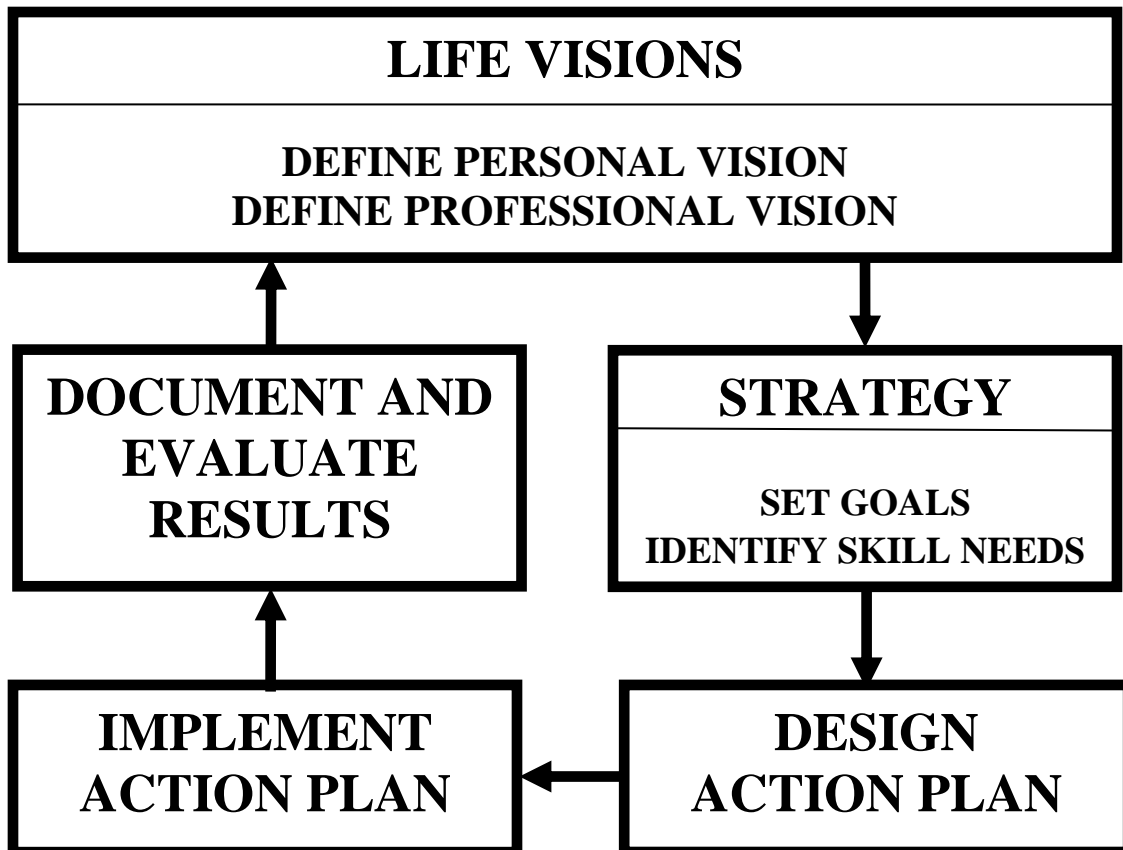


Figure 1 – Career Management Process

CAREER MANAGEMENT – AN INCREDIBLE PERSONAL JOURNEY

PERSONAL VISION

Before writing a career plan, you should first pause and ask yourself some very personal questions. What is important to you, personally? If you could design a perfect life for yourself, what would it include? How would your idea of a perfect life impact other people, and what would create satisfaction and happiness for you?

What type of lifestyle do you want? Is it to accomplish many things and have personal growth? Is good health important? Would you like to have many friends, enjoy a variety of recreational activities, and have a lot of fun?

Where would you like to physically live? If you could select any part of the world for your life, what would be important to consider in that selection?

How important is your family? Are they less important than your career, equal to your career, more important than your career, or the most important part of life?

How would you like to be involved in your local and professional communities? Do you want to ignore them, be informed to a limited degree, be somewhat involved, or be a leader? When you prepare to leave this world, what would be the most important way you would like to be remembered?

PROFESSIONAL VISION

Your professional vision is developed by considering what you want as it relates to your work. What is your major professional focus? Is it to be a generalist or a specialist? Do you want to know a little about many things or as much as possible about a very narrow area of technology?

Are you interested in basic research to provide a foundation for product development? Or would you rather develop initial designs and use computer modeling? Can you use creativity to apply general concepts to specific products? Are you interested in testing new product ideas and verifying design specifications? Would you like to be involved in the production of new products or in product sales? Are you interested in management, consulting, or academia?

Do you want to work for a large or small corporation or do you want to own your own company? Is a position in government of interest or do you want to be in the private sector?

What do you want to accomplish. Is it respect, money, authority, expertise, or personal satisfaction of a job well done? Only you can answer these and the other questions relating to your professional vision, and these answers provide direction to the development of your career plan.

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STRATEGY

Use your personal and professional vision statements as a foundation to develop a strategy to achieve results. This includes setting goals and identifying skill needs.

GOALS – Goals should be specific and relate directly to your personal and professional visions. So, as you define your goals, review your visions, and write goals that will help you achieve what you want. Three types of goals should be considered and established – long-term, mid-term, and short-term.

Long-term goals focus on several years in the future. Establish goals that support the most important aspects of your personal and professional vision, and that help you start the process to achieve desired results. Long-term goals relate to the end of your professional career and may be more general in scope.

Mid-term goals are somewhat easier to establish because you do not need to look quite as far into the future. These can be more focused and structured and should relate to the middle years of your career experience. One excellent question to ask is “Do my mid-term goals relate to and support my long-term ones?” If not, make appropriate changes.

Short-term goals focus on your present situation and should be easy to formulate. They are also more likely to be achievable because the shorter-term environment is more stable and can be defined. Short-term goals should also support mid and long-term goals and your visions.

A typical short-term goal might be “getting an A” in a course. Better goals would be to schedule time to read the text before each class session and to ask questions in class when you need more information. If you accomplish those goals, you will likely get an “A” and will also develop better study habits and learn more from the course.

SKILL NEEDS – The next step is to review your inventory of skills and identify skills that you need to develop or improve. Starting this process early in your undergraduate educational experience is significant because of the many choices during these years. Review your skills and identify what skills you need to achieve your goals.

Defining skill needs is an integral part of planning and preparing for potential opportunities. Achieving your vision is more than just being lucky. People who appear to be lucky usually are pro-active and not reactive. They prepare for future opportunities by developing appropriate skills.

Skill needs are both technical and non-technical. When establishing your career plan, identify skills in both areas. Let’s first consider technical skill development.

During the undergraduate education process, you have some options on selecting your major area of study and adding elective courses. Select the courses that help you develop technical skills identified in your career plan.

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Strive to achieve maximum benefits from each course. Start by asking “What technical skills can I enhance by my active participation in this course? How will this support my strategy and visions? What extra things can I do to maximize the value of this course?”

This approach will help you plan and control your career. Prepare for class by reading the textbook and taking notes. Book notes help you determine what information you need so you can ask appropriate questions. This will increase your technical skills and support your strategy of skill development. Asking questions in class is also a good way to build self-confidence and to learn how to communicate in a group environment.

There are also many opportunities to enhance non-technical skills during your formal education experience. Be an active participant in classes and study groups. Because engineering has a major focus on people, you need to develop effective communication and other “people” skills. This includes working with people who are from diverse backgrounds and environments and who have ideas that may be different from your own.

Some of your most effective laboratories are professional society student organizations. These inexpensive “laboratories” offer outstanding opportunities to practice non-technical skills in a safe environment. As a volunteer, your offer to be an active member will be welcomed by all organizations. The key to achieving the most from professional societies is to join early and be as active as possible.

Professional organizations offer opportunities to enhance skills such as written and oral communications, teamwork, project management, organization, time-management, ethics, and accountability. Experiences in professional organizations should be added to your resume and discussed in job interviews.

Identify non-technical skill needs by reviewing your present skills. Are you comfortable when working with other people? Can you write clearly and concisely? Do you feel confident to give oral presentations? Have you developed effective leadership skills or do you have experience in project management? Are you a good team member?

Although we tend to focus on technical skill needs, non-technical skills have a greater impact on career success. So, identify important non-technical skills that you need to enhance and target them for short-term, mid-term, and long-term enhancement.

ACTION PLAN

An action plan provides details of what, when, and how you can take control of your career. It includes specific activities that relate directly to your strategy. When developing action plans, you need to understand the difference between an action plan item and a goal. A goal is something you want to obtain or accomplish and an action plan item is what you will do to make that happen.

Start with a focus on short-term goals and skills that can be developed in the present semester and school year. Outline specific activities and define details of how and what you will do and put target dates to each activity. Action plans should be achievable and measurable and should include a process to document results.

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Break up long-term activities into smaller steps that can be accomplished and evaluated in a reasonable timeframe. Quantify items and consider how each point can be evaluated. After writing each action item, ask the question, “Can the results of this activity be measured by more than just a yes or no?”

Good-Bad Examples of Action Plan Items

Good: Schedule 8 PM – 9 PM on Monday to read the textbook and solve homework problems for the statics class.

Bad: Study for the statics class. (Should be more specific and measurable)

Good: Join a study group and spend at least one hour three times per week with the group to solve homework problems in Calculus.

Bad: Get a good grade in Calculus class. (Hard to quantify a “good” grade. This should be more specific and measurable)

Let’s consider a good example of a goal and associated action plan. If a goal is to learn new skills and to receive an “A” in class, an action plan might include:

- Talk to the instructor when appropriate to establish a personal network.
- Make a list of what I would like to take from this class that will strengthen my ability to achieve my visions.
- Establish a specific time schedule to read the appropriate textbook materials.
- Write some notes as I read the text and identify areas in which I need additional information or just do not understand.
- Listen carefully to the class lecture and take effective class notes.
- Use my text notes to ask appropriate questions for clarification.
- Listen to the instructor’s answers to my questions and add these to my class notes.
- Join a study group to expand my ability to solve problems.
- Document the results of the class and add to my skill set.

Next, look at your skill development needs. Select your first technical skill need and write an action item to achieve it. For example, if you need to improve your math skills, use options of additional self-study, forming a special math study group, or using a tutor.

Now, review non-technical skills you have defined for improvement. Some of these can be developed within the classroom. A good opportunity to build teamwork and interpersonal skills is to focus on these when working as part of a laboratory team.

Some engineering courses include non-technical skill development for ABET EC 2000 Outcomes and program accreditation. Incorporate these exercises in your action plan.

Volunteer and be actively involved in one or more professional society student organizations. As a volunteer, you will not have to stand in line for opportunities to practice skill development. In addition to helping other students, you will be improving your communication, interpersonal, project management, and teamwork skills.

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DOCUMENTATION

Figure 1 shows how documentation fits into the overall picture. When you complete a task, you might be so happy that it is done that you forget to recording results. This is a big mistake. An extra value of completing each step of an action plan is when you record results. This provides excellent resources for your personal portfolio and can be used in many ways as you progress in your career.

Documented successful activities can be added to your resume and discussed in job interviews. Records of detailed results of accomplishments also provide useful information to refine your career plan and future career direction.

EVALUATION

Your action plan should include a systematic process of evaluating results. Enjoying success is good, but you should also realize there can be even more value in failure

In developing your career plan, include some reasonable risks. The key word is reasonable. This is one of the best methods to move ahead of your competition and to achieve more of your vision.

Don't be afraid to fail. You will fail from time to time like everyone else. Failure is not a bad thing, as long as it is not too severe. Failure is not falling down – it is not getting back up. Review the process that led to failure and learn how you can use this experience to enhance your career. Look back to learn from the past, but then focus more on the future and how your experience can help you be more successful.

CAREER PLAN REVISIONS

And this brings our discussion to the last part of the career plan process. Review the results of your action plan implementation and make changes in your career plan to keep on target. Notice how Figure 1 shows a closed loop between evaluation and your visions. This demonstrates that you should fine-tune your career plan to take advantage of changing conditions and new opportunities.

Even if your vision is still valid, you may want to revise your strategy and subsequent action plans. Many new professional opportunities require new or enhanced skills. You will not be successful in taking advantage of opportunities unless you are proactive and develop skills for new opportunities. In other words, don't knock on the door of opportunity until you are prepared with the key of skills to open it.

So, who is responsible for your career management? Look in a mirror. When should you start planning and controlling your career? Now! When can you relax and stop controlling your career? Maybe never, but certainly not before you have achieved your professional vision or retire. Even then, you need to focus on your personal vision for the balance of your life.