

Chapter 5

Career Success in the Chemical Profession—A “How to” Primer

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Career success has many steps. It is the proverbial marathon as opposed to a sprint. We present in this chapter some key aspects of being successful as a chemist—perhaps being successful in any position—and some of the lessons learned from over a combined 50 years of experience leading in industry, academia, and the military.

“Success is that peace of mind knowing that you made an effort to DO YOUR BEST and BECOME THE BEST that you could.”—John Wooden

To many people, university, including graduate school, simply builds on their grade school and high school experiences—with expanded roles, responsibilities and circle of influence (1). Then, welcome to the world of work. Suddenly we are dealing with meetings, deadlines, managers of every ilk, often influential decision makers without a single university course in chemistry.

In this chapter, we present some obvious facts but also many “smacks (2),” jolting you out of your paradigm box, to non-obvious job/life elements of careers in the chemical profession. And your authors capture over 70 years of industrial, academic, and even military leadership experience. We believe we make can make a difference in your life.

We will humor you by on-going good-news/bad-news juxtapositions. They really *can* complement each other.

Good News—Flexibility and Reliability Are Your New Middle Names.

Bad News—This Takes Some Work.

Whether career-newbie or seasoned employee, our plans are nothing more than “fleeting proposals.” We need to make plans: short-term, long-term, life/career, daily to-do lists This is no surprise to anyone. Life happens. And we need to modify them. In no way does this mean we become frivolous or merely tossed by the wind.

We should learn something every day. That means we are smarter tomorrow than today *and* decisions we made today might be made differently tomorrow, including our plans. “If you fail to plan, you plan to fail” said Benjamin Franklin. Also the world around us changes daily—priorities, projects, relationships—requiring that we remain **flexible**.

Beyond that, we commit to actions—our own personal growth goals, goals in our professional lives, promises in our personal lives. These often involve others with whom we wish to keep a good solid reputation, of being honest, reliable, trustworthy, person of integrity. **Reliable**. When we breach these “promises” and goals, our reliability and trustworthiness is thrown into question. This becomes disappointment, an emotional event for the other party and such a reputation can play a large role in your developing career, the perception to fulfill your current role and be ready to grow into others.

Good News—Congratulations, You Have a Job. Bad News—You Have to Work... Hard.

“Work saves us from Boredom, Vice and Need.”—Voltaire

More than 50% of workers are unhappy in their jobs (3), not fulfilling their life passions and purpose, keeping them from lives fully lived. Knowing these are important life management aspects, to know your “Why” and create your “How” (4–8). This will drive you to set career goals, achieve results, and be successful, not just in a job or career, but in your life. You will also leave a meaningful legacy for those who follow. Understanding your own personal “Why” is coupled with a critical understanding of your job: Why does it exist? Why were you selected to be in it at this time? What is expected of you? How will you make your employer succeed, since it isn’t about you—it’s all about them?

A few simple guidelines—The Big Three of employment:

- Be on time. It’s respectful, responsible and establishes your reputation.
- Do what you say you will do when you say you will do it. Committing to deliver a result, a report, any assigned task, is like a promise.
- Manage the expectation. Life happens and we are not always able to deliver on our promises. However, if we keep others informed, they can modify their expectations. For example: “I can’t get you the report on Friday. Is next Tuesday all right?”

Your excellent reputation is built one good deed at a time. But one bad deed does not take you down one rung. You slide to the bottom.

Also, some very simple no-brainers should be remembered:

- Say “please” and “thank you”. Good manners are common sense. But common sense is not always common practice.
- Do it right the first time, then you only need to do it once.

Working “hard.” Unless you prefer to have the reputation of being “average”, you have to exceed the mean. Extraordinary people do extraordinary things.

Finally, where you start out will *not* be where you end up. Plan for the journey, expect surprises, and enjoy the trip, for a life fully lived.

Good News–You’re Out of the Starting Blocks. Bad News–It’s a 90-Day Race.

The 90-Day rule: You are most likely not the President of the United States but may be in a new job. You might also be continuing in your “current” job for the foreseeable future. Nonetheless, it can be of value to think of the *next ninety days as a critical Planning Block*. If in a new role, you will quickly create impressions, such as being flexible, reliable, hard-working, pleasant to work with, good team member, networks well, and being project- and goal-focused (5). This will ensure that you have made a noticeable difference by your efforts.

Even if you’re a seasoned professional seeking to grow into a new role, you can still use the 90-day Block to modify your behavior to improve your reputation, regardless of how good it may be, or you believe it is. Sometimes it can be worth a fast anonymous survey of your colleagues on Post-It notes: 3 things I should keep doing, 3 things I should start doing, and 3 things I should stop doing. Take this input and decide to improve 2-3 behaviors over the next 30 days, and then a few more over the other 60-days. It’s just feedback. Use it. Don’t take it personally, as they’re trying to help you.

Good News–You Know Many Things. Bad News–Everything You Know Is Old.

There are many basics of our profession we learn in earning our degrees, truly the foundation upon which your skyrocketing career should build. Or are they?

Be it textbook knowledge gained by studies or knowledge gained experientially, this information is available to all other seven billion Earth inhabitants. It’s *old*. For us to be successful in our careers, we must demonstrate with tangible evidence, that we are both capable *and* keen to keep learning new things. ACS Career Counselor Bill Carroll has said that you should demonstrate that you can work hard and teach yourself the next “Big Thing.” Ten years ago the next Big Thing was cellphone apps. Five years ago it was 3-D printing with plastic resins. These are still active and promising fields but no longer cutting edge new. Continue being active across fields, become conversational in many areas, reading, participating in seminars, conferences and workshops. Keep your eyes open. The next Big Thing is awaiting discovery. Consider enrolling in additional education (such as an advanced degree, an MBA, or others). Many employers provide financial incentives for this.

One way to flood your mind with stimulating new ideas is read, read, read. Failing taking the time to read with any excuse is always going to be a negative. Watch TED Talks across a broad range of subjects (9).

Do one thing every day that scares you, even just a little bit. Not dangerous, just out of your comfort zone. Within a year you will have 365 new interesting stories to spice up your conversations and presentations.

You can’t learn less, only more. Become a **rock-star life-long learner**.

Good News–You Know a Lot. Bad News–You Don’t Know Everything.

Your newly minted degree, regardless of level, is tangible evidence that you can work hard and learn well. So far so good. And it’s a warm fuzzy feeling, that you’re “sort of smart”. We suggest you dismount that horse before you fall off, or worse, get knocked off.

This presents a wonderful opportunity to continue your education on-the-job and score many good-to-work-with points by having the courage to say, “I have a question.” Most folks with not assume you are below average intelligence, self-aggrandizing or just showing off. They will assume you have a bona fide curiosity to learn and improve your performance. Do pay attention to body language (such as rolling of eyes, smacking of foreheads). Do write notes for review. This shows your commitment to learn and motivates others to help you.

Good News–You Have 168 Hours Every Week. Bad News–You Have ONLY 168 hours Every Week.

“The key is not to schedule your Priorities but to prioritize your Schedule.”–Steven Covey (1)

This Covey-ism states an expectation which will surround you: Competence in P&O, Planning and Organizing. And there are literally thousands of books and webinars to assist you (with examples in references (10) and (11)). Some simple facts to think through include: 1) time is limited; 2) reality *always* wins; 3) habit-patterns rule; 4) plan for some space.

Here are a few tips:

- Make sure you have SMART goals to direct your efforts–Specific, Measurable, Actionable, Realistic, and Time defined–that are clearly coupled with your success *and* that of your organization. These are often set and agreed upon with your direct supervision or mentor to ensure their significance and “SMARTness” (10–12).
- Create a to-do list. Perhaps Mind-Map it first (13), and select the top 3-4 things to be *done–today*. These are your As. If you get *nothing* else done except these, you will still have a successful day. The notion of razor-sharp, brutal focus is the subject of many books but especially that by Hanson (13–16).
- Order items in terms of importance, meaning benefit to you, to your organization. Use the Eisenhower Matrix (1): Quadrants with axes of importance and urgency. Activities in Quadrant I are both urgent and important, usually crises needing firefighting. Quadrant II is a preferable place to be. They are important, so yields valuable results without the stress of hurry. This allows us to think more clearly, get more input, make better decisions. Quadrant III is urgent but not important. These are actions often proximate (in our face), pressing (someone else’s urgency) and popular (let’s have fun), but not adding high value. Control them. Quadrant IV is neither important nor urgent. Avoid these time-pirates. They may be pleasant fun stuff for relaxation and re-charging. Just don’t spend *too* much time and energy in these activities.
- All the others as Bs. Rank them also, and date-activate. Estimate when you may get to work on them in the future and probably their time requirement. Put them on your calendar: Out of sight, out of mind but *never* forgotten. Our brains are too valuable as thinking tools to use just to remember *what to do* (10, 14).
- A worthwhile exercise, especially early in your work career, is to discuss the list and your understanding of the priorities with your direct supervisor or mentoring colleague for verify your understanding. Do this regularly (16, 17).
- Also, of value, is to create a “*not to do*” list or a “*whenever*” list and file them for future reference.

Good News–Everybody’s Different. Bad News–Everybody’s Different.

Regardless of your career path, you are unlikely to be working under the proverbial rock or in a cave. You will be working with others and navigating the ultra-complex and ever-changing minefield

of personal relationships. You have to fit in before you stand out. You will be counting on others to support you with their expertise *and* connections, and they will be counting on *you*.

There are many methods available to help you understand yourself and others better (17, 18). In general, they are based upon two notions: What types of behavior and situations energize me? Where is my behavioral comfort zone? They are also plagued with the misconception among most users. The categorizations do not describe the way we are, just our preferences. Most methods categorize behavior and preferences into groups of four or multiples. (DISC and Insights each have 4, Myers-Briggs has 16.) The method described by Bolton (18) places observable behavior along two axes: The first Assertiveness from strong Ask behavior to strong Tell behavior, the second is Responsiveness ranging from Open to Closed.

Driver preference is high assertiveness and responsiveness, like to be in charge and make decisions. Many technical folks are attracted by the precision of data and being right. Analytical preference is lower assertiveness but high responsiveness, slower to make decisions, taking the risk of being wrong is not a best friend here.

You can imagine bringing just these two behaviors together in a project meeting could result in thunder and lightning. Simple observation of behavior allows us to learn deduced preferences quickly and easily (and approximately). Since we like people most like us, we can temporarily modify our behavior to align with theirs to enhance understanding and communication. This is *not* selling out. It is creating an engaging productive work team, as Carnegie says (19).

Communication is one of humanities' greatest challenges—not just hearing what is said or written (words are only 7% of communication) (10, 19) but understanding what is meant. Covey Habit 6: Seek to understand before being understood. A good tool here is clarifying and confirming to show your interest and commitment. Paraphrase back to the person what you heard: “As I understand it, you mean...”

These are simple practices but difficult to learn habits. They will make your work life run much smoother with less confusion and stress *and* remarkably greater success. Become known as a great listener.

A few more points of interpersonal relationships: As the subtitle suggests, networking and getting people to know you is often the gateway to career movement and success. Others will assume your technical competence by virtue of your degrees and having navigated through interviews and getting hired. And in your job, you can further demonstrate that by managing your projects and helping your team succeed. But many positions are filled without being posted (some estimates are more than half.) Who gets hired (20)? People they know (through resumé and interviews) and people they like (evidence that you can work with us, that you can make us successful). It's simpler than we think even for the introvert, as Susan Cain discusses (21).

A simple step towards personal courage: Arrange a ten-minute appointment. Introduce yourself and have a well-practiced elevator speech. Ask the other person for theirs, ask them what they do, what they like about it, what they would change—and take notes. Ask, “how do people like me help you succeed?” Also ask, “with whom else should I speak?” As people generally like to speak about themselves and to help others, it's usually problem solved. The world is full of people that are keen to meet you. Do not deprive them of this opportunity (Covey: Habit 1—Be Proactive) (1). Your network will explode.

Good News–Cultures Are Diverse. Bad News–Yours Is Not the Only One.

Every organization made up of people developed norms, ways of doing things, ways that work, as do countries and nationalities. In the same way, as people each of us have mindsets (22), a culmination of our upbringing and experiences, our values, our beliefs, views of “the way things should be,” how I should be treated and treat others, views of what is right. To navigate our careers, it behooves us to understand our organizational culture. Is it formal, highly autocratic, traditional top-down, “do as told?” Procedures have been thoughtfully developed for the greater good. Is it more cooperative and flexible, always seeking new ways to do things, “break the rules but keep the laws?” Both these and the continuum between such extremes have benefits, but it is wise to learn your environment to navigate it, to “fit in.”

As with international cultures, these norms evolve over long periods of time. We suggest you understand and adapt your own views. Rather than ask, “why do they do *that*?” ask, “why does that work for them?”. It comes across as curious rather than judgmental.

Of course, every culture is evolving and changing. You may be in a position to help guide such changes to your liking and, more importantly, to the benefit of the organization.

Good News–You’re Promoted. Bad News–Welcome to Management.

“The role of a leader is to create passionate followers ... and more leaders.”–Heinz Plaumann

A very common career event for successful technical practitioners is to be invited to a supervisory or leadership role (23). Many aspire to this transition–to the prestige, being able to direct others, being the boss. Yet it is both an organizational and career risk. The transition is not always a good one. Generally, it requires some coaching, letting go of your technical expertise and project success, and ensuring the growth of those under your leadership and *their* success. Ouch. It’s not about you; it’s about them, and so positioning their efforts to ensure the organization’s growth and success. There are endless resources to read about this, workshops, and webinars for your consumption. John Maxwell has been very prolific in writing, and in other media, on the subject. Also recommended are Peter Drucker, Simon Sinek, and Adam Grant.

A number of your skills will be critical to managing and motivating your team to perform well. Recall, your success depends entirely upon theirs, on planning, organizing, vision-relevant and strategy-relevant goals, and on meeting them. *Effective communication is absolutely essential within your organization to ensure everyone understands what is expected and how it contributes to organizational success, and why they matter.* This is essential not just with the group but laterally to other partner groups and stakeholders, and also up the organization, to ensure visibility and direction. There will be many procedures and protocols which you will need to ensure are in place and being followed. You represent, like it or not, the rest of the organization to your group. They look to you and are counting on you.

Management can be distinguished from leadership, however (22). Management is about stability, work, subordinates, objectives, and results. All are good and required for the tasks for the success of an organization. However, leadership is about creating change, people, passionate followers, vision, and sustainable achievement. You may be called upon in your new role to straddle these two.

In the past, leadership was about authority. Today it is about influence.

Good News–Work/Life Integration. Bad News–Work/Life Balance Is Difficult.

“You are CEO of your life.”–Dan Ariely

Thus far, we have painted a complex mosaic of your life. But with our prioritization expertise, we identify the most important things for a happy successful career and *a life fully lived*. Not just in our careers, but adopt Covey’s, “First Things First Principle” in all life areas, as well as his second, “Begin with the End in Mind.”

In getting started, be proactive; plan where you’re going. For the “End in Mind,” ask “How will I get there?” And put first things first.

Several suggestions for effective integration of our work and our personal lives include:

- Develop a life mission statement. From this will come your personal goals, including one for family and self-development (1, 24).
- Master your finances, or they will master you. Many workshops and seminars exist concerning this, but a simple principle may help: 10-10-80. Save 10% of your gross income. Donate or invest 10% in a worthy cause. Live off the other 80%. The savings will grow remarkably throughout the 30-40 years of your work career, enabling you to access many things in life; and you will have learned a significant lesson in self-discipline.
- “You Gotta Serve Somebody” It’s a famous Bob Dylan song, but in our context we should be sharing our good fortunes with others. Perhaps you can share with your professional society (such as ACS, AIChE, etc.) or community groups (such as Rotary, Kiwanis), or volunteer service to schools, libraries, or assisted living facilities. No act of kindness returns void (25, 26).
- Have a side gig. Work hard for work. Play hard for fun. You have but one life, and should invest in other activities outside your focused work world. It provides energizing stimulus going across many parts of our lives. One of the authors (MB) has achieved some world renown in numismatic circles, often being an invited speaker. The other (HP) has a regular musical gig having taught himself to play pedal steel guitar to help fund his graduate school.
- Regularly, daily if possible, feed your entire being for balanced growth. Physically, that means healthy exercise routines, healthy nutritional inputs. Mentally it means reading, studying. Spiritually, it means meditating, praying. Covey calls these habits “Sharpen the Saw” (1).

Good News–Safety Is Your Friend. Bad News–Safety Takes Work.

All should return home at the end of the workday in the state that they arrived.

Whether you work in industry, a government laboratory, an academic setting or even a patent office, safety is an absolutely critical element (27). **THERE ARE NO SMALL SAFETY INCIDENTS.** Whether it was the 1984 Bhopal disaster costing thousands of lives, or the 2008 university lab accident with t-butyl lithium which resulted in a fatal fire, and lengthy and costly litigation, the loss is tremendous: lives, capital, time, and goodwill. It is estimated that an OSHA recordable incident in most industries results in the loss of \$40K (28). This can only be made up by additional revenues.

The Occupational Safety and Health Administration (OSHA) was founded in 1971 to ensure safe and healthful working conditions, by setting and enforcing standards and providing training,

outreach, and education. This was done for the benefit of both employees and employers, even if you work on a computer all day. Carpal tunnel syndrome is a serious, incapacitating affliction of such workers *and* is an OSHA recordable incident.

Much of the required safety protocols, training, and meetings may seem like meaningless paper work. But a healthy safety culture is extremely motivating to ALL employees—tangible evidence that the organization *genuinely* cares about employees, their welfare, both in the present and the future. Unavoidably these attitudes migrate into all other aspects of a job, projects, career planning and growth.

“Get input... decide... do... Only what you *do* counts.”—Heinz Plaumann

Next Steps—Your Top Skills

“Success is getting what you want—Happiness is wanting what you get.”—Dale Carnegie, Next Steps ...

“Success is getting what you want—Happiness is wanting what you get!”—Dale Carnegie

“The Future Start now. So does Planning your Legacy, the ripples reaching beyond your life!”—Heinz Plaumann

Your work should provide tangible evidence of these skills and attributes. Keep them in mind as you progress in your career:

- Technical. But remember, it’s old. Plus, you don’t know everything. Learn the next big thing.
- Planning and organizing. Put first things first, with the target in mind. Set goals with milestones.
- Humility. Have an eagerness to learn from others, and the courage to ask to help.
- Communication. Listen, listen, listen.
- Keep your promises. Time, deliverable results, manage expectations. *Don’t disappoint.*
- Work hard. Work on the right things, learn quickly, be willing to help
- Contribute to the on-going success of your organization and others.

There is a lot to digest here, but you will be pleasantly surprised where the journey takes you. Above all, be good, be safe, be smart, and have fun.

Author Biography

For over 30 years, Heinz Plaumann, Ph.D. enjoyed a very successful career in industry, including several international assignments. Most of his roles were in leadership positions where he learned the value of mentoring and developing his colleagues to reach their full potential. He co-founded QuantumQik Careers to make career mentoring and other key life and organizational skills available to others, to enjoy their Lives Fully Lived! He holds over 25 patents and has more than 35 publications and conference presentations. He is an adjunct professor at several Detroit-area universities, has written many book chapters. He enjoys meeting others by networking as well as playing music.

Mark Benvenuto has been the chairperson of the Chemistry and Biochemistry Department at the University of Detroit Mercy for 18 years where his position involved hiring of faculty and staff. Years earlier, as a lieutenant in the United States Army, he gained years of experience hiring civilian augmentees to a war stock reserves operation in Mannheim, West Germany.

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